U.S. Department of Commerce

Enterprise Architecture

Version 7.0

May 31, 2005

Preface to the DOC Enterprise Architecture

The Department of Commerce (DOC) "Enterprise" consists of the entire Commerce mission operating units, support organizations, and business areas. The DOC EA is a means of defining the business and technology requirements to perform the Enterprise mission in an efficient, cost effective, and sustainable manner. It provides a basis for collaborative initiatives that will enhance mission performance, as well as reduce the cost of future operations and new programs and/or new IT to support programs.

The DOC EA is a federated architecture. The DOC EA is the union of the operating unit architectures and the overarching Department architecture. The Department architecture addresses lines of business and services common to all operating units. It establishes basic goals and directions, characterizes common systems and services, and defines fundamental standards universal to all operating units. This approach provides the operating units flexibility in executing their mission specific lines of business, while providing greater efficiency and reduced cost for the common lines of business. The diverse nature and mission of each operating unit mandates a federated structure, allowing each operating unit to define an architecture that best fits its business requirements. Where common tasks exist however, an enterprise-wide approach is taken. In this way, each operating unit can fulfill its mission tasks, and provide the best service to all stakeholders and customers while supporting the overall goals of the DOC.

This document captures the progress the DOC has made since the last Enterprise Architecture assessment. The primary areas in which significant improvements have been made are:

- Documenting clearly the target architecture (see page ___
- Performing a gap analysis to support transition to the target (see page___)
- Documenting a realistic transition strategy (see page___)
- Documenting how the EA is used in the investment decision process (see page ____)
- Adding an IT Security component to the DOC EA (see page ____)
- Providing good examples of how the Commerce EA has been used to identify and support key IT management decisions. (see page ___)

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EA Maturity Analysis

The following tables provide a mapping between each assessment criterion and the reference material provided to show compliance. DOC progress, in reference to the actions to be taken provided in the Completion and Use Plan Instructions, is also captured in the tables below.

Change: Architectural Approach

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	EA Framework Selection	Custom EA Framework derived from Metis IT Management framework, following the FEA business, data, applications, infrastructure, and security layers (see Sections 4 and 5) and linked to the FEA Reference Models (see sections 2.1 and DOC Technical Reference Model and Standards Profile Framework document provided in the reference material and the operating units reference materials traceability matrix (Appendix C))	Complete target architecture – Completed (see section 5) Define information value chains for business functions – Under development Develop more detailed description of the process followed to identify, manage, and close baseline to target architecture – Completed (see Gap Analysis and Migration Plan (section 6), Governance Process (section 12) and CPIC process (section 13)) Enhance the EA's Gap analysis and migration plan to include direct references to the operational IT plans and the Exhibit 300s to detail the plan and schedule to target state – Under development Illustrate linkage of initiatives to goals, processes and outcomes – Completed (see Gap Analysis and Migration Plan (section 6)) Include IT Architecture policy and procedures for architecture development and governance approved by senior management. Communicate IT Architecture to staff and business management and review the process periodically – Completed (see CPIC process (section 13), governance process (section 12) and communications strategy (section 7))
2	Key Stakeholders business drivers documentation	Commerce has enumerated its stakeholders in sections 2, 3.2, and 3.3. Key strategic drivers are captured in section 3.3	
3	EA Transition Strategy Process	The Commerce Information Technology Review Board (CITRB) is responsible for establishing and maintaining conformance with the DOC EA (see section 12) DOC has implemented a Capital Planning and Investment process at both the department and operating unit levels (see section 13 and the operating units EA documentation in the reference materials)	
4	Detailed EA Transition Strategy Process including sequencing plan	A synopsis of the gap analysis and migration, identifying the line of business subfunction, target state, current state, and actions, is provided (sequencing plan (see section 6)) Detailed EA transition strategy process – Under development	
5	Linkage of transition strategy to CPIC process	Proof of line-of-sight linkage between the EA transition strategy and IT investment portfolio – Under development	

Change: Strategic Direction

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Buy-in and Support of key executives	The Commerce Information Technology Review Board (CITRB) is chaired by the CIO and CFO jointly. Its members include several of the operating units' CIOs (see section 12)	Incorporate change and risk management for each initiative in the transition plan from its Exhibit 300 – Under development The Operational IT Plans will be incorporated into the EA as the basis of the transition plan, and will be linked to specific initiatives through CPIC process as detailed by the Exhibit 300s – Under development A communications strategy will be defined for the Enterprise Architecture. It will build from the already extensive information contained on the EA web site, and develop an outreach program to all stakeholders – Completed (see Communications Strategy (section 7))
2	Baseline Architecture	The baseline architecture (business, data, applications, infrastructure, and security layers) is provided (see section 4)	
3	Target architecture and change risk management strategy or approach	The target architecture (business, data, applications, infrastructure and security layers) is provided (see section 5) Change and risk management is managed by the CITRB and the CPIC process (see sections 12 and 13)	
4	Transition and Communications Strategy	A synopsis of the gap analysis and migration identifying the line of business subfunction, target state, current state, and actions is provided (sequencing plan (see section 6)) The Communications Strategy is in progress (see section 7)	
5	EA applied to creating and maintaining investment programs	Examples of the EA driving the ITIM/CPIC process to identify, create, and maintain investment initiatives for funding – (see Sections 12 and 13)	

Integration: Interoperability

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Interoperability standards defined conceptually	Interoperability standards are provided in the TRM and standards profile (see section 10 and the TRM and Standards Profile Framework document provided in the reference material)	Define linkage between DOC standards profile and DOC business function – Completed (see Standards Profile (section 10) and TRM and Standards Profile Framework, which provides guidance for the operating units) Assess current interoperability standards in the EA to identify patterns related to business functions and align to SRM at the enterprise level. Strengthen linkages between SRM and TRM – Completed (A mapping of the TRM to services is included for commerce and transportation and for weather and water (see section 10 and the NOAA reference material)) Identify services and components that can be shared across the
2	Interoperability standards aligned to the TRM and SRM	Interoperability standards are aligned to the TRM. The Standards Profile provides a framework for specifying standards for the service components A mapping of the TRM to services is included for commerce and transportation and for weather and water (see section 10 and the NOAA reference material)	
3	Interoperability standards are related to business functions. Business functions are aligned to components and services	The DOC BRM (section 2.1) and PRM (section 8), Appendix C provides a traceability matrix to the operating units and their reference model alignments	

Level	Assessment Criterion	Evidence	Completion and Use Progress
4	Interoperability and sharing of information are the backbones of the target architecture	The target architecture for the DOC is a service-oriented architecture (see section 5.5) The Commerce Administrative Management System (CAMS) is using an Enterprise Application Interface (EAI) to provide seamless integration and interoperability (see section 5.3)	Department –Completed (see current architecture and target architecture (sections 4.0 and 5.0))
5	EA demonstrated the ability to link and integrate common technologies and business processes	EA improves the integration and interoperability of both business processes and technology – Under development	

Integration: Data

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Data architecture is broadly defined	The data architecture for the current and target architecture is captured in this report and in the reference material for the operating units (see sections 4.2 and 5.2 and the operating units EA documentation provided in the reference material)	Define the source, content, and consumer of data for each business function – Under development Outline the methodology for integrating data with business processes - Completed (see Data architecture (section 4.2)) Document the methodologies and strategies of integrating data among business functions and mission priorities – Completed (see Target business architecture (section 5.1), Target data architecture (section 5.2) and target applications architecture (section 5.3)) Use business process baseline to identify all data exchanges – Under development
2	Data relationships, interdependencies, and definitions are defined at a conceptual level	The data architecture layer is based on the FEA Data Reference Model (see section 4.2)	
3	Approach to integrating data with business processes and mission priorities	The NOAA CLASS system will provide a common approach to storing new and legacy data for ease of retrieval both internal and external to DOC, and is one of the critical modernization activities within the DOC (see section 6)	
4	Target architecture reflects a transition strategy and judgment on the data required for the future state	Target architecture transition strategy is provided by the gap analysis and migration plan (see section 6) Data required for future state – Under development	
5	Ability to increase integration and promote the re-use of data within the enterprise and across other agencies	Linkage of data to lines of business is provided (see section 4.2) Demonstrated ability to increase integration and promote reuse of data within the enterprise and across other agencies – Under development	

Integration: Business Logic

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Standard business processes and rules are broadly defined	The DOC uses the FEA BRM to capture its business processes (see section 2.1). Legislative, policy, and technology drivers are included (see section 5)	Extract business rules implied from process maps, as well as legislative, policy, and technology drivers – Completed (see the legislative, policy and technology drivers (section 5)) Describe constraints on business functions, including inputs and outputs required within and between business processes, components and constraints on structure, and changes to those inputs/outputs – Under development
2	Business processes and rules are integrated and described for portions of the architecture	The DOC has mapped its operating units to the BRM (see section 4.1) The current and target business architecture layers address the business processes at the department level (sections 4.1 and 5.1)	
3	Business processes and rules are integrated and described throughout all portions of the architecture	Business processes and rules integrated and described throughout all portions of the architecture – Under development	
4	The transition strategy describes the changes required to business processes and rules	The gap analysis and migration plan matrix is mapped to the BRM line of business subfunctions (see section 6)	
5	Demonstrated results of viewing common business processes and rules across the enterprise and across other agencies	Demonstrated results of viewing common business processes and rules – Under development	

Integration: Interface

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Interface components and requirements are conceptually defined	The infrastructure architectures address interfaces at the department level (see sections 4.4 and 5.4)	Identify and document external interfaces, providing full details – Under development Diagram and model the relationships between the identified interfaces and the business functions they are related to – Completed (see Data architecture (section 4.2)) Link interface descriptions to Performance Measures – Under development
2	External interface descriptions are contained within the EA	Each of the operating units also address interfaces and business processes(see section 5.2 and the operating units reference material traceability matrix (Appendix C)	
3	Interfaces are aligned to the business architecture	Alignment of interfaces to the business architecture – Under development	
4	Interfaces are aligned to performance measures	Alignment of interfaces to performance measures – Under development	
5	Establish common components integrated through well-defined interface requirements	Common components integrated through well defined interface requirements – Under development	

Convergence: Components

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Components defined at a high level	Components are defined at a high level (see sections 4.1, 4.3, 5.1, 5.3 and the documentation provided by the operating units in the reference material)	Define all services deployed across multiple LOBs and identify any others that could be – Completed (see Current Business Architecture (section 4.1), Current Applications Architecture (section 4.3), Target Business Architecture (section 5.1), and Target Applications Architecture (section 5.3)) Identify all reusable components and show linkage to business functions – Completed (see Current Business Architecture (section 4.1), Current Applications Architecture (section 4.3), Target Business Architecture (section 5.1) and Target Applications Architecture (section 5.3)) Show linkages of services and components to interfaces, to demonstrate interoperability between business functions – Under development
2	Components and shared services are defined	The current and target EA descriptions describe the components and shared services throughout the enterprise using the FEA SRM. Some of the services are at the department level and others cross operating unit boundaries (see sections 4.1, 4.3, 5.1, and 5.3 and the documentation provided by the operating units in the reference material (Appendix C))	
3	EA uses services, components, and interoperability relationships to describe portions of the architecture	Component mapping to some of the business processes supported, the interfaces used to access them, the applications they enable, the data elements they manage, and the technology platforms hosting them – Under development	
4	EA uses services, components, and interoperability relationships through all artifacts	Component mapping to all of the business processes supported, the interfaces used to access them, the applications they enable, the data elements they manage, and the technology platforms hosting them – Under development	
5	EA describes transition and investment decision processes, and presents a service/component enabled target architecture	Implementation of a service-oriented architecture showing a component/service layer and reusable components/applications – Under development	

Convergence: Technical Platform

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	EA contains TRM definitions	The TRM and the standards profile framework follow the FEA TRM terminology (see section 10; the complete document is provided in the reference material)	Expand level of detail within the infrastructure view of the EA, identifying servers, platforms, operating systems, and all key components and services – Completed (see current infrastructure architecture (section 4.4) and target infrastructure architecture (section 5.4)) Link all infrastructure items to the business functions they support –
2	EA defines a high-level linkage to services and technology	Discussion about the integration of technology and services is included in this report (see sections 5.0 and 6.0, and the documentation provided by the operating units in the reference material)	

Level	Assessment Criterion	Evidence	Completion and Use Progress
3	EA defines and integrates TRM with view of services allowing patterns to develop	A mapping of the TRM to services is included for commerce and transportation, and for weather and water (see section 10, and the NOAA reference material as well as the operating units reference material traceability matrix (Appendix C))	Under development Create view(s) of redundant patterns of TRM and services – Under development
4	EA provides an inventory of TRM and services with a view towards identifying redundant TRM and service components	Redundancy analysis capability to assist in identifying technical platform redundancies and consolidation opportunities – Under development	
5	Create cross-cutting views of the EA on a TRM standard or SRM service component basis	EA links all artifacts to TRM and services, and provides cross cutting views – Under development	

Convergence: Performance

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	EA conceptually defines performance measures	The performance measures are linked to the strategic goals and objectives of the Dept of Commerce, then are assigned to the appropriate operating unit for stewardship with business related outcomes (see section 8 and the documentation provided by the operating units in the reference material)	Incorporate performance measures from Exhibit 300s for all existing and budgeted initiatives – Completed (see Performance Metrics (section 8)) Define performance measures for the rest of the target architecture – Completed (see Performance Metrics (section 8)) Document performance measures at all levels of the EA - Completed (see Performance Metrics (section 8) and the documentation provided by the operating units in the reference material)
2	EA links performance measures to some portions of the architecture segments	The performance measures are linked to the Dept of Commerce's strategic goals and objectives, and are then assigned to the appropriate operating unit for stewardship with business related outcomes. The operating units then tie their metrics to their architectures (see section 8 and the documentation provided by the operating units in the reference material)	
3	EA defines detailed performance measures and links them to service and technical portions of the architecture	EA maps applicable portions of the architecture performance measures to applications, service/components and IT products – Under development	
4	Clear line-of-sight PRM mapping of metrics to technical and service layers of the architecture to business outcomes	Clear line-of-sight mapping of PRM metrics to technical and services layers, to business outcomes – Under development	

Level	Assessment Criterion	Evidence	Completion and Use Progress
5	Detailed performance measures, linked all technical and service layers, and integrated performance measures with transition and investment planning	EA transition strategy should capture anticipated performance measurement improvement over time for projects defined in the sequencing plan – Under development	

Convergence: Security

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Security standards are conceptually defined	Security standards are defined in this report in the baseline and target architectures, and within the TRM and Standards Profile document (see sections 4.5 and 5.5, and the TRM and Standards document provided in the reference material)	Define security requirements for each business function based on the Security Certification and Accreditation requirements – Under development Document linkage of security requirements to all levels of EA – Completed (see sections 4.5 and 5.5, and the TRM and Standards document provided in the reference material) Strengthen integration of IT security standards into the TRM and technology view of the EA – Completed (see DOC Standards Profile (section 10) and the TRM and Standards document provided in the reference material, see Current infrastructure view (section 4.4) and Target infrastructure view (section 5.4))
2	EA aligns security standards to the TRM	Security standards are defined in this report in the baseline and target architectures, and within the TRM and Standards Profile document (see sections 4.5 and 5.5, and the TRM and Standards document provided in the reference material)	
3	Security standards are integrated within portions of the components, applications, and technologies	Security standards and technology are discussed in the current and target applications architectures (see sections 4.5, 5.1, 5.4, and 5.5, and the operating units documentation provided as reference materials)	
4	Security standards are tightly defined within all levels of components, applications, and technologies	Security standards are tightly defined within all levels of components, applications and technologies – Under development	
5	Security standards are tightly defined and are presented as part of the transition planning and investment analysis of the EA	IT security is a factor considered in the DOC CPIC process (see section 13) but is not tightly defined	

Business Alignment: Strategic Goals

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	EA contains high-level strategic goals	DOC has high level strategic goals (see section 3.3)	Develop performance goals that provide measurable improvement in delivery of information and services across all business functions – Completed (see DOC Performance Metrics (section 8)) Identify areas of the target architecture that provide better utilization of existing resources and/or cost avoidance through shared services – Completed (see current applications architecture (section 4.3) and target applications architecture (section 5.3)) Performance measures will be improved to reflect the achievement of business and customer-centric outcomes – Completed (see DOC Performance Metrics (section 8))
2	Business architecture is consistent with agency strategic plan	DOC assigns goal stewardship to the operating units that have been mapped to the BRM (see sections 3.3 and 4.1)	
3	Line-of-sight between business architecture elements and business outcomes from the strategic plan	DOC has tied its strategic goals, objectives, outcomes and performance measure to the operating unit level (see section 8)	
4	Manageable and measurable performance objectives and improved resource allocation decisions	EA transition strategy shows progress towards achieving goals – Under development	
5	Business-IT value chain analysis has been performed	Reflection of value chain and other analyses to include redundancy analysis – Under development	

Business Alignment: Business Target

Level	Assessment Criterion	Evidence	Completion and Use Progress
1	Conceptual target business functions (BRM)	The DOC BRM is included in this report (see section 2.1 and the operating units documentation in the reference material)	Establish linkage among the vision, goal, objectives and initiatives defined in the transition plan – Under development Define linkage between the vision, goals, objectives and the technology deployed to implement them – Under development Clearly link the DOC vision to the target architecture – Completed (see Target Architecture (section 5))
2	Common vocabulary for describing the business context of the enterprise	FEA BRM is the common vocabulary used by the DOC (see section 2.1 and operating units documentation in the reference material)	
3	Business vision linked to technology and target architectures	The gap analysis and migration plan is linked to the BRM with references to the technology required (see section 6)	
4	Reporting capability for comparing IT investments relative to target EA	Reporting capability/alignment scorecard – Under development	
5	Results or changes to business operations through alignment of investments and programs	Documentation of improvements via the EA transition strategy process – Under development	

1. Introduction

The use of EA as a planning and decision tool is rapidly becoming institutionalized at DOC. This has led to or assisted in a number of initiatives throughout DOC, including those listed below:

- The Census Bureau's 2010 Decennial Census Project is using the EA to guide decisions on what aspects can be outsourced, how the existing Census Bureau components can be reused, and what new components can be developed for reuse in the future. They have identified the use of handheld computers for field follow-up as a means of significantly reducing the overall cost by eliminating mountains of paper that would have to be processed.

- The NOAA CLASS (Comprehensive Large Array-data Stewardship System) initiative was developed through the evaluation of the existing NOAA architecture and the requirements that several line offices had to increase storage capacity for data. By developing a centralized data storage resource, they are able to meet all storage needs at less overall cost as well as provide a major customer benefit by providing a single portal to retrieve any archived data.

- The NOAA High Performance Computing initiative consolidates the resources of several organizations providing more capability without having to increase the number of super computers in use.

- The NOAA Central Environmental Satellite Computer System (CEMSCS) and the Satellite Environmental Processing System (SATEPS), two large environmental and weather data systems, will be combined on a new system, avoiding over $4 M/year in costs. This was determined to be feasible after a careful study of the NOAA Enterprise Architecture and identifying significant similarities in how these two systems functioned.

- NOAA Marine Fisheries Service (NMFS) used the architecture to study alternatives for managing their telecommunications infrastructure (centralized vs. decentralized) – and to support consolidation.

- NMFS also used the EA to analyze its use of Oracle databases. The resulting consolidation enabled them to save several million dollars in maintenance and support costs.

- The National Weather Service (NWS) Telecommunications Gateway initiative used the EA to consolidate three separate projects into a single integrated initiative. NWS has created an Integrated Project Office (IPO) to manage the consolidated projects as one integrated NWSTG System Program. The benefits of integrating the three projects allows the IPO to have one Master Plan to provide an integrated view of the dependencies between projects, consolidated budget plan with Earned Value Management, overarching risk assessment and mitigation plan, and clear lines of communication and authority

- NOAA used a detailed analysis of the network architecture to develop and execute a reconfiguration that simplified network management and also provided a NOAA-wide directory service component.

- The US Patent & Trademark Office is using their EA heavily in leveraging their overall modernization plans. By analyzing the business processes common to the patent processing and trademark processing they are designing a common approach to handle the input of applications either by mail or electronically using electronic wrappers to identify documents and manage the workflow.

- CAMS use of architecture (Core Financial System with component feeder systems) has organized an array of disparate systems into a cohesive structure, leading to sound financial data and clean audits - common core software development and testing. DOC is now working to reduce the number of "instances" of this system to one.

- CAMS/CSTARS, the DOC procurement feeder system has used the EA to develop an integrated workflow using common XML schema and shared messaging system to provide real-time transaction processing between systems. This technology will be reused to integrate other feeder systems as well

- HCHBNet is an overall building-wide network infrastructure in the Herbert C Hoover Building (DOC Headquarters). Using the EA to analyze the existing 14 separate networks it was possible to combine them into one, and then leverage this infrastructure to combining over a hundred smaller phone systems into one VoIP phone system with emergency broadcast capability.

- An analysis of the current DOC architecture identified a number of systems used to process various Federal Grants. Using the EA it was determined that 14 of these systems could be consolidated to one, and there is continuing evaluation of the remaining system for further consolidation. This effort has also greatly simplified DOC's migration to the E-Grants front-end grant application system.

- NTIA is currently using EA to leverage the redesign of their Office of Spectrum Management and the systems that support this critical business function. In developing their Target EA, they have identified areas where interoperability of systems is critical to the success of the effort and have developed a Web Services Oriented Architecture (SOA) to facilitate enterprise integration.

- The International Trade Administration is the lead agency for the Export E-gov initiative and has used the EA to pull together a collaborative Web site with other government partners including, USDA and SBA, to provide a one-stop shopping for all information and services relating to exports.

This document captures the Department of Commerce (DOC)'s progress since the last OMB Enterprise Architecture assessment, and is organized in the following manner:

- Section 2 provides a brief overview of the Department of Commerce and its operating units; the mapping of the DOC to the BRM is included with representative mappings of the reference models at the operating unit level.

- Section 3 provides the DOC's mission, vision, goals, and objectives. This section maps the goals to the operating units, and describes how each operating units supports its particular goals.

- Section 4 captures the DOC's current enterprise architecture from the business, data, applications, infrastructure, and security layers.

- Section 5 captures the DOC's target enterprise architecture from the business, data, applications, infrastructure, and security layers.

- Section 6 provides the gap analysis and migration plan for the DOC. It is mapped to the BRM lines of business subfunctions. Included in this section is a discussion about the ongoing modernization efforts at the operating unit level.

- Section 7 describes the communications strategy for the DOC.

- Section 8 describes the performance metrics and how they align to the operating units. Outcomes are included.

- Section 9 describes the DOC IT Strategic Plan.

- Section 10 discusses the DOC TRM and Standard Profile.

- Section 11 introduces the DOC Performance Plan and notes that the operating units prepare their own performance plans, which have been included in the reference materials.

- Section 12 describes the DOC Governance Process.

- Section 13 describes the DOC CPIC process and its phased approach.

- Section 14 provides a listing of all the E-Gov initiatives within the DOC, and maps them to their appropriate FEA BRM line of business.

- Appendix A is a Traceability Matrix using the OMB Assessment form.

- Appendix B is a listing of the references that were used to generate this report and provide additional materials from the operating unit level.

- Appendix C is a traceability matrix to the operating units reference material

2. Department of Commerce Overview

The Department of Commerce was established in 1903 as the Department of Commerce and Labor. Since then, it has undergone many significant changes in its mission and scope, but has maintained a vital role in foreign and domestic trade, and in the spread of technology throughout the country.

The Department of Commerce consists of many component organizations. The figure below is the current organizational structure of the DOC.

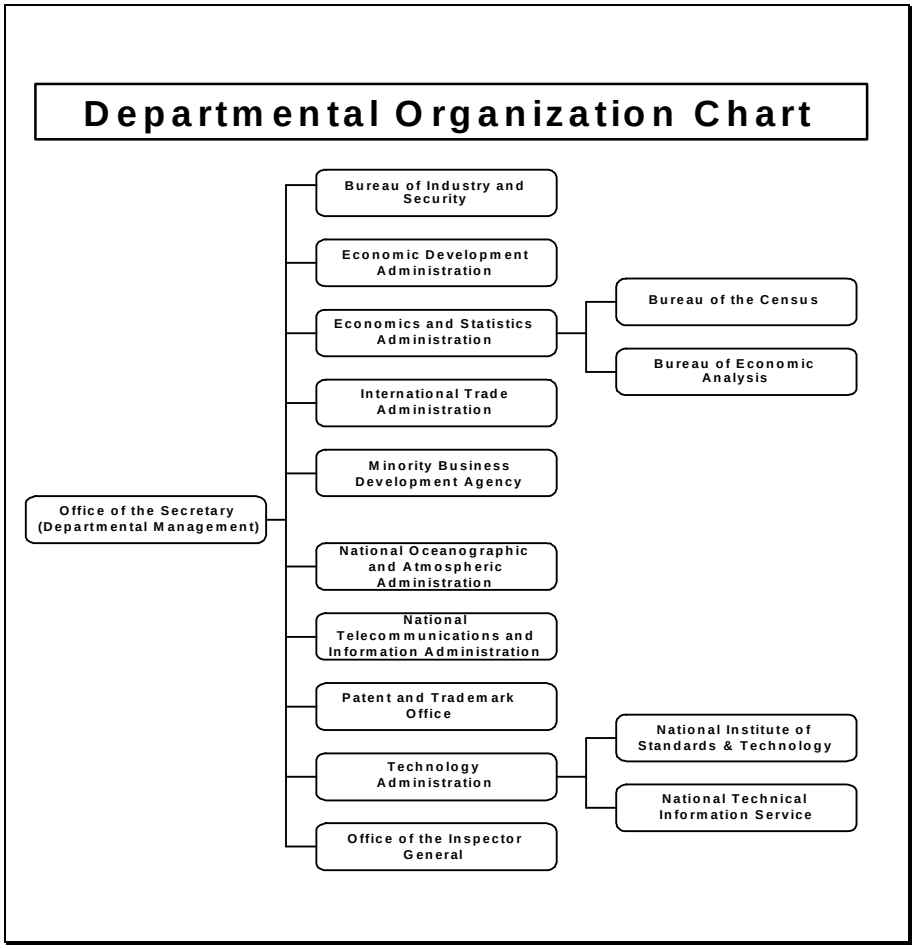


Figure 1 - Organization of the Department of Commerce

The IT Management of the DOC's many additional sub-units and bureaus falls under the control of the parent organization. All of the operating units above have a Chief Information Officer (CIO), who reports to not only that organization's management, but also to the DOC CIO, enabling the promotion of a DOC-wide strategy on IT issues.

Office of the Secretary

The Office of the Secretary (OSec) is the Commerce Department's general management arm and provides the Secretary with principal support in formulating policy and providing advice to the

President. OSec provides program leadership for the DOC's functions, and exercises general oversight of its operating units. This office includes subordinate offices that have DOC-wide responsibilities, or perform special program functions directly on behalf of the Secretary.

Bureau of Industry and Security

The Bureau of Industry and Security (BIS) seeks to advance U.S. national security, foreign policy, and economic interests by:

- Regulating exports of critical goods and technologies that could be used to damage those interests (while furthering the growth of legitimate U.S. exports to maintain our economic leadership)
- Enforcing compliance with those regulations
- Cooperating with like-minded nations to obtain global support for this effort
- Assisting nations that are key exporters or transit points for sensitive good and technologies to strengthen their own transit and export controls
- Monitoring the U.S. defense industrial base to ensure it remains strong

Economic Development Administration

The Economic Development Administration (EDA) provides grants to economically distressed communities to generate new employment, help retain existing jobs, and stimulate industrial and commercial growth. EDA seeks to ensure sustainable development by working with these communities so they may be empowered to develop and implement economic development and revitalization strategies.

Economic and Statistics Administration

The Economics and Statistics Administration (ESA) produces, analyzes, and disseminates some of the nation's most important economic and demographic data. ESA develops economic policy and describes major demographic trends. Important economic indicators produced by ESA include retail sales, housing starts, and foreign trade. The agency also supervises economic accounting systems that regularly provide broader measures, such as gross domestic product, foreign investment, and personal income by states.

ESA is not just in the business of generating economic data but also in sharing it with the American public. The Economic Bulletin Board (EBBB), a dial-up bulletin board system, delivers all major U.S. Government economic information, including economic indicators from the Bureau of the Census, Bureau of Economic Analysis, Federal Reserve Board, and Labor Department. The National Trade Data Bank (NTDB) is issued in a monthly CD-ROM that contains federal export information and international economic data of interest to business, policy makers, and researchers.

Bureau of Census

The U.S. Census Bureau - known as "the nation's fact finder" - conducts the decennial census of population and housing, demographic and economic censuses, and more than 200 annual surveys, many of which are for other government agencies. Most of the data released as periodic economic

indicators is derived from surveys of businesses; most of the demographic data comes from the census or household surveys. The Census Bureau is the largest statistical agency in the United States and one of the largest in the world.

By law (Title 13, U.S. Code), the Secretary of Commerce, through the Census Bureau, is responsible for taking a census of the country's population every ten years. The purpose of this task is to reapportion representation in the House of Representatives among the states. The Census Bureau's population counts are also used to redistrict state legislature, and as one element in deciding the distribution of billions in federal grant money. In addition, the Census Bureau monitors the nation's economic health through a system of recurring national surveys. Its statistical reports are used for programs and services at all levels of government. Local organizations, government and non-government, business and industry, and others value the data. These organizations analyze the data, looking for trends, and use it to make planning decisions and devise sound marketing strategies.

Economic censuses, performed every five years, produce benchmark data for business and industry as well as governments. Monthly, quarterly, and annual reports, based on periodic economic surveys, provide national data on key subjects covered in the censuses. This data is critical to the national economic accounts, on which other federal agencies base policy decisions affecting the U.S. economy. The Census Bureau is the nation's primary source of data on U.S. imports and exports.

The Census Bureau is a world leader in statistical research and methodology. Through the development of computerized mapping for census-taking, it has become a pioneer in the nascent high-tech industry of geographic information systems. Furthermore, it collects information about more than 200 countries outside the United States.

Bureau of Economic Analysis

The Bureau of Economic Analysis (BEA) provides the most comprehensive statistical picture of the U.S. economy available. It develops, prepares, and analyzes the economic accounts of the United States. BEA's national, regional, and international economic accounts present basic information on such key issues as economic growth, regional development, and the nation's role in the world economy.

National economic accounts include the national income and product accounts that feature the quarterly estimates of gross domestic product (GDP), the wealth accounts that feature estimates of fixed reproductive tangible wealth, and the input-output accounts that show the interrelationship of U.S. industrial production.

Regional economic accounts include estimates and analysis that feature estimates of personal income and related economic series by region, state, metropolitan area and county.

International economic accounts include the international transactions (balance-of-payments) accounts that feature U.S. transactions with foreign countries and related estimates of the U.S.

international investment position that feature estimates of U.S. direct investment abroad and foreign investment in the United States.

International Trade Administration

The International Trade Administration (ITA) is the lead unit for trade in the Department of Commerce. It promotes U.S. exports of manufactured goods, nonagricultural commodities, and services. It participates in formulating and implementing U.S. foreign trade and economic policies and monitors market access and compliance of U.S. international trade agreements. In these processes, ITA works closely with U.S. businesses and other government agencies including the Office of the U.S. Trade Representative and the Department of Treasury.

Minority Business Development Agency

The Minority Business Development Agency (MBDA) promotes growth and competitiveness of the nation's minority-owned businesses. MBDA seeks to improve minority business enterprise access to domestic and international marketplaces and improved opportunities in financing for business start-up and expansion.

Established by Executive Order in 1969, the Agency:

- Funds a nationwide network of minority and American Indian Business Development Centers, Minority Business Opportunity Committees and Business Resource Centers providing management and technical assistance to minority businesses.
- Coordinates plans, programs, and operations of the federal government, which affect or contribute to minority business growth.
- Initiates public and private sector partnerships with other organizations to increase market opportunities and access to capital for minority-owned companies.

MBDA provides management and technical assistance to minority group individuals who own or are trying to establish a business. This includes assistance with planning, bidding, estimating, bonding, construction, financing, procurement, international trade matters, franchising, accounting, and marketing. The agency has counseling centers located in areas with large concentrations of minority populations and businesses.

National Oceanographic and Atmospheric Administration

The National Oceanic and Atmospheric Administration’s (NOAA) mission is to understand and predict changes in the Earth’s environment and conserve and manage coastal and marine resources to meet our Nation’s economic, social, and environmental needs. NOAA provides its services through five Line Offices and numerous special program units. NOAA's five Line Offices are:

- NOAA Fisheries
- NOAA National Weather Service
- NOAA Ocean Service
- NOAA Research
- NOAA Satellites and Information

NOAA has adopted a structure of four Mission Goals and a Mission Support Goal around which all of our work is planned and organized, based on stakeholder input and internal assessments of our mandates and mission. NOAA's Line and Staff Offices execute activities required to achieve these goals through NOAA programs. These programs may involve the activities of more than one Line or Staff Office. The five Mission Goals are:

- Ecosystems: Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management
- Climate: Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond
- Weather and Water: Serve Society's Needs for Weather and Water Information
- Commerce and Transportation: Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation
- Mission Support: Provide Critical Support for NOAA's Mission.

National Telecommunications and Information Administration

The National Telecommunications and Information Administration (NTIA) of the Department of Commerce serves as the President's principal adviser on telecommunications policies pertaining to the nation's economic and technological advancement and to regulation of the telecommunications industry. NTIA plays an important role in attaining the goal of an "information superhighway."

NTIA's program activities are designed to assist the Administration, Congress, and regulatory agencies in addressing diverse technical and policy questions. These activities are performed by a staff of approximately 300 employees, including policy analysts, computer scientists, electronic engineers, attorneys, economists, mathematicians, and other specialists.

Patent and Trademark Office

The U.S. Patent and Trademark Office (PTO) provides patent and trademark protection to inventors and businesses for their inventions and corporate and product identification. Through preservation, classification, and dissemination of patent information, PTO encourages innovation and the scientific and technical advancement of American industry.

It examines applications and grants patents on inventions, publishes and disseminates patent information, maintains search files of U.S. and foreign patents for public use and supplies copies of patents and official records to the public. It performs similar functions for trademarks.

The agency has accumulated the world's largest collection of applied technical information, a collection that has grown at an accelerated rate since 1790, when the patent system was established.

PTO has a classification system in which patents are divided into classes and subclasses of subjects, covering all items from the simple to the complex. This system permits any individual to locate and examine all existing patents in any field of technology.

Technology Administration

The Technology Administration (TA) leads civilian technology for Commerce and works with U.S. industries to promote economic competitiveness. The agency targets four goals:

- Development of advanced technologies in partnership with the private sector
- Rapid commercialization and deployment of new technologies
- Building a 21st century technological infrastructure
- Leadership of industry and government initiatives to improve U.S. technological competitiveness

Established by Congress in 1988, the Technology Administration, the Commerce Department's youngest agency, consists of the National Institute for Standards and Technology (NIST); one of the department's oldest bureaus, the National Technical Information Service (NTIS); and the Office of Technology Policy (OTP). It is headed by the Under Secretary for Technology.

National Institute of Standards and Technology

The National Institute of Standards and Technology (NIST), part of the Technology Administration, promotes U.S. economic growth by working with industry to develop and apply technology, measurements, and standards. NIST carries out its mission through a portfolio of four interwoven programs: Measurement and Standards Laboratories, Advanced Technology Program (ATP), Manufacturing Extension Partnership (MEP) and National Quality Program.

National Technical Information Service

The National Technical Information Service (NTIS) is the U.S. government repository for research and development results and for other information produced by and for the government as well as a variety of public and private sources worldwide.

The NTIS collection includes three million titles on more than 375 scientific, technical, engineering and business-related subjects. These subjects range from agriculture to medicine, from the environment to space exploration, from communication to transportation. NTIS collects, organizes, maintains, and disseminates the information in a variety of formats-microfiche, paper, CD-ROMs, audiovisuals, computer software, and electronic databases.

Office of the Inspector General

The Office of the Inspector General (OIG) conducts and supervises audits, inspections, and investigations of DOC programs and operations. Its goals are to promote economy, efficiency, and effectiveness and to prevent and detect fraud, waste, abuse, and mismanagement in Commerce programs and operations.

2.1 Mapping of DOC to the FEA BRM

DOC has developed a framework for use with the Metis Modeling Tool (Computas Inc.) that provides common elements and definitions to describe business processes and IT assets. This

provides the linkage between the operating unit architectures and the Department architecture, and structures it so that it is consistent in approach, definition, and content throughout the DOC.

The lines of business within the DOC are broken into two groups, depending on how they are managed and implemented:

- Department-wide (mostly administrative and planning)
- Operating Unit Mission areas

The table below illustrates the lines of business the Department of Commerce participate in.

Table 1 – DOC Lines of Business

Services for Citizens	Mode of Delivery	Support Delivery Of Services	Management Of Government Resources
Homeland Security	Financial Vehicles	General Government	Administrative Management
Key Asset & Critical Infrastructure Protection	Credit And Insurance	Central Records and Statistics Management	Facilities, Fleet, And Equipment Management
Border & Transportation Security	Direct Loans	Revenue Collection	Help Desk Services
General Science and Innovation	Transfers To States And Local Governments	Federal Asset Sales	Security Management
Scientific & Technological Research & Innovation	State Loans	User Fee Collection	Travel
Disaster Management	Project/Competitive Grants	Public Affairs	Workplace Policy Development And Management
Disaster Repair & Restore	Formula Grants	Public Relations	Financial Management
Disaster Preparedness & Planning	Federal Financial Assistance	Product Outreach	Accounting
Disaster Monitoring & Prediction	Direct Transfers to Individuals	Official Information Dissemination	Budget and Finance
Workforce Management	Federal Grants (Non-State)	Customer Services	Payments
Training & Employment	Government Service Delivery	Planning And Resource Allocation	Collections and Receivables
Economic Development	Regulatory Compliance And Enforcement	Management Improvement	Asset and Liability Management
Industry Sector Income Stabilization	Permits and Licensing	Workforce Planning	Reporting and Information
Intellectual Property Protection	Standard Setting / Reporting Guideline Development	Budget Execution	Human Resource Management
Business & Industry Development	Inspections & Auditing	Strategic Planning	Benefits Management
Transportation	Public Goods Creation & Management	Enterprise Architecture	Personnel Management
Air Transportation	Information Infrastructure Management	Capital Planning	Payroll Management and Expense Reimbursement
Water Transportation	Knowledge Creation And Management	Budget Formulation	Resource Training And Development

Services for Citizens	Mode of Delivery	Support Delivery Of Services	Management Of Government Resources
Education	Knowledge Dissemination	Regulatory Development	Security Clearance Management
Higher Education	Advising and Consulting	Rule Publication	Staff Recruitment And Employment
Elementary, Secondary & Vocational Education	General Purpose Data and Statistics	Regulatory Creation	Information & Technology Management
Natural Resources	Research and Development	Public Comment Tracking	Lifecycle/Change Management
Conservation, Marine & Land Management		Policy and Guidance Development	System Development
Water Resource Management		Legislative Relations	System Maintenance
Energy		Congressional Liaison Operations	IT Infrastructure Maintenance
Energy Resource Management		Proposal Development	IT Security
International Affairs and Commerce		Legislation Testimony	Record Retention
Global Trade		Legislation Tracking	Information Management
International Affairs &Humanitarian Aid		Internal Risk Management And Mitigation	Supply Chain Management
Foreign Affairs		Service Recovery	Goods Acquisition
Environmental Management		Continuity Of Operations	Inventory Control
Pollution Prevention & Control		Contingency Planning	Logistics Management
Environmental Remediation		Controls And Oversight	Services Acquisition
Environmental Monitoring & Forecasting		Program Monitoring	
Health		Program Evaluation	
Consumer Health & Safety		Corrective Action	
Public Health Monitoring			
Law Enforcement			
Crime Prevention			
Criminal Investigation & Surveillance			
Criminal Apprehension			
Community and Social Services			
Community and Regional Development			

3. Dept of Commerce Strategic View

3.1. Department of Commerce Mission

The Department of Commerce creates the conditions for economic growth and opportunity by promoting innovation, entrepreneurship, competitiveness, and stewardship.

3.2. Department of Commerce Vision

For almost 100 years, the Department of Commerce has partnered with U.S. businesses to maintain a prosperous, productive America that is committed to consumer safety and the protection of natural resources. Together, we have a record of innovation in manufacturing, transportation, communications, measurement, and materials that has helped to sustain U.S. leadership of the international marketplace. By assisting the private sector, our vision is that the United States continues to play a lead role in the world economy.

3.3. Department of Commerce Goals and Objectives

Goal 1: ***Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers and consumers***.

Objective 1.1: Enhance economic growth for all Americans by developing partnerships with private sector and nongovernmental organizations

Objective 1.2: Advance responsible economic growth and trade while protecting American security

Objective 1.3: Enhance the supply of key economic and demographic data to support effective decision-making of policymakers, businesses, and the American public.

Goal 2: Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science.

Objective 2.1: Develop tools and capabilities that improve the productivity, quality, dissemination, and efficiency of research.

Objective 2.2: Protect intellectual property and improve the patent and trademark system.

Objective 2.3: Advance the development of global e-commerce and enhanced telecommunications and information services.

Goal 3: Observe, protect, and manage the Earth's resources to promote environmental stewardship.

Objective 3.1: Advance understanding and predict changes in the Earth's environment to meet America's economic, social, and environmental needs.

Objective 3.2: Enhance the conservation and management of coastal and marine resources to meet America's economic, social, and environmental needs.

Management Integration Goal: To achieve organizational and management excellence – is equally important to all bureaus

The following table summarizes the contribution of each of the Operating Units to the Department level goals. A detailed explanation of the mapping is provided after the table.

Table 2 – Strategic Goals Mapped to the Operating Unit

	Goal 1	Goal2	Goal 3	Management Integration Goal
Office of the Inspector General				x
Economic Development Administration	X			X
Economic and Statistics Administration	X			X
Bureau of Economic Analysis	X			X
Bureau of Census	X			X
International Trade Administration	X			X
Bureau of Industry and Security	X			X
Minority Business Development Agency	X			X
National Oceanic and Atmospheric Administration			X	X
U.S. Patent and Trademark Office		X		X
Technology Administration		X		X
Office of Technology Policy		X		X
National Institute of Standards and Technology		X		X
National Technical Information Service		X		X
National Telecommunications Information Administration		X		X

3.3.1 Operating Units Support to Goal 1

- Economics and Statistics Administration monitors and measures socioeconomic and macroeconomic trends
- Bureau of Economic Analysis produces the gross domestic product and related economic measures that provide essential information to improve decision-making on such matters as monetary policy, federal and state budget projection, allocation of federal funds to states, and trade negotiations.
- The Bureau of Census supports the Bureau of Economic Analysis by collecting statistical information about the economy. They also provide demographic information about U.S. society by conducting regular surveys and Decennial Censuses that are used by federal, state, and local officials and by private stakeholders to make important policy decisions.
- The International Trade Administration (ITA) assists the growth of small export businesses, enforces U.S. trade laws and trade agreements, maintains U.S. trade with established markets, promotes new business with emerging markets and improves access to overseas markets by identifying and pressing for the removal of tariff and nontariff barriers. ITA also improves access to foreign markets by enforcing compliance with U.S. trade laws and agreements
- The Bureau of Industry and Security (BIS) advances U.S. national security, foreign policy, and economic interests. BIS's activities include regulating the export of sensitive goods and technologies in an effective and efficient manner; enforcing export control, antiboycott, and public safety laws; cooperating with and assisting other countries on export control and strategic trade issues; assisting U.S. industry to comply with international arms control agreements, monitoring the viability of the U.S. defense industrial base, and seeking to ensure that it is capable of satisfying U.S. national and homeland security needs; and promoting public-private partnerships to protect the nation's critical infrastructures.
- The Economic Development Administration (EDA) assists economically distressed communities by promoting a favorable business environment through its strategic investments in public infrastructure and technology. EDA supports effective decision-making by local officials through its capacity-building programs.
- The Minority Business Development Agency (MBDA) helps minority-owned businesses obtain access to public and private debt and equity financing, market opportunities, and management and business information to increase business growth in the minority business community

3.3.2 Operating Units Support to Goal 2

- The U.S. Patent and Trademark Office preserves the nation's technological edge, which is key to its current and future competitiveness
- The Technology Administration serves as the focal point to foster the development, diffusion, and adoption of new technologies; to disseminate information on U.S. and foreign technology strategies and best practices; and to create a business environment conducive to innovation.

- The Office of Technology Policy develops recommendations and advocates policies and initiatives to use technology to build economic strength.
- The National Institute of Standards and Technology conducts cutting-edge research; and develops and disseminates measurement techniques, reference data and materials, test methods, standards, and other infrastructural technologies and services required by U.S. industry to maintain competitiveness.
- The National Technical Information Service meets the challenge of permanent preservation of and ready access to the taxpayers' investment in research and development through the acquisition, organization, and preservation of the documents and publications added annually to the permanent collection. NTIS also provides advanced global e-commerce channels for dissemination of specialized information to business, industry, government, and the public, and makes public access to the bibliographic database available to all users.
- The National Telecommunications and Information Administration (NTIA) manages federal use of the radio spectrum, promotes the use of spectrum that most efficiently serves all Americans, and maintains readiness response to crises.
- NTIA's laboratory, The Institute for Telecommunications Services, performs extensive basic research on the quality of digital speech, audio, and video compression and transmission characteristics.

3.3.3 Operating Units Support to Goal 3

- The National Oceanic and Atmospheric Administration supports this goal through its own strategic plan which forges a path for meeting the needs of the nation today and addressing the critical issues of tomorrow. NOAA has set an agenda for wise investment of finite resources through four mission goals, namely:
  - Improve protection, restoration, and management of coastal and ocean resources through ecosystem-based management.
  - Increase understanding of climate variability and change
  - Improve accuracy and timeliness of weather and water information
  - Support the nation's commerce with information for safe, efficient, and environmentally sound transportation.

3.3.4 Operating Units Support to the Management Integration Goal

- All departmental bureaus will seek to achieve more efficient and more effective management by:
  - Acquiring and managing the fiscal and related resources necessary to support program goals
  - Acquiring, managing, and developing a diverse, skilled, and flexible staff, using information technology as an essential tool
  - Acquiring and managing the technology and related resources to support program goals

4. Dept of Commerce Baseline Enterprise Architecture

DOC has developed a framework for use with the Métis Modeling Tool (Computas Inc.) that provides common elements and definitions to describe business processes and IT assets. This provides the linkage between the operating unit architectures and the Department architecture, and structures it so that it is consistent in approach, definition, and content throughout the DOC.

The lines of business within the DOC are broken into two groups, depending on how they are managed and implemented:

- Department-wide
- Operating Unit Mission areas

The Department-wide business lines are mostly administrative and planning. For a complete description of each Operating Unit's Baseline Enterprise Architecture, please refer to the individual Operating Unit's Enterprise Architecture listed in Appendix B, References.

4.1 Business Architecture

The Business Architecture is at the top of the hierarchy. It describes the mission, organization, and lines of business of the enterprise, as well as the goals and performance measures assigned to those lines of business. The remaining three views (Data, Applications, and Infrastructure) derive their meaning and within the context of the Business View.

The DOC EA is a federated architecture. There are business functions that span operating unit boundaries and are shared by the organizations and those that are specific to an operating unit's particular mission.

4.1.1 Enterprise Business Functions

4.1.1.1 Human Resources

The business functions performed by HR include:

- Worker's Compensation
- Awards, performance appraisals and bonuses
- Retirement and retirement planning
- Workforce, employment, and workforce planning
- Position management, classification, and staffing
- SES and Executive Resources
- Employee diversity, recruitment and retention
- Safety and health management
- Learning Management

In the Human Resources (HR) business area, there are eight offices that perform all of the HR functions, plus NOAA has four, Administrative Service Centers (ASC) and the Census Bureau Jeffersonville processing center has an HR Office. The offices are:

- Office of the Secretary (OSec)
- Office of Inspector General (OIG)
- International Trade Administration (ITA)
- Foreign Commercial Service
- National Oceanic and Atmospheric Administration (NOAA)
- National Institute of Standards and Technology (NIST)
- U.S. Patent and Trademark Office (USPTO)
- U.S. Bureau of the Census
- U.S. Bureau of the Census, Jeffersonville, IN Processing Center

The ASC's are:

- MASC/Boulder
- EASC/Norfolk
- WASC/Seattle
- CASC/Kansas City

The OSec office also handles HR functions for the Economic and Statistics Administration (ESA), and The Minority Business Development Agency (MBDA). The NIST office handles HR functions for the Technology Administration and for the National Technical Information Service (NTIS). The ITA office also handles the HR functions for the Bureau of Economic Analysis (BEA), the Bureau of Industry and Security (BIS), the Economic Development Administration (EDA), and the National Telecommunications and Information Administration (NTIA). The ASC offices handle NOAA field offices as well as some of the Census Bureau field offices. All payroll and benefits processing are performed by the U.S. Department of Agriculture National Finance Center in New Orleans, LA. The OSec office provides the policies and procedures for the DOC.

4.1.1.2 Financial Management

The business functions in the Financial Management LOB are:

- Accounts payable
- Small purchases and printing
- Standard interfaces
- Accounts receivables and reimbursable
- Labor cost and cost accounting
- Budget execution

Within the DOC, seven operating units perform the Financial Management business functions for the DOC. As with the HR functions, the larger operating units provide services for the smaller one. The list is as follows:

- Office of the Secretary
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Bureau of the Census
- National Institute of Standards and Technology (NIST)

- International Trade Administration (ITA)
- U.S. Patent and Trademark Office (USPTO)
- National Technical Information Service (NTIS)

The NIST office provides financial management services for BEA, EDA, ESA, MBDA, and NTIA.
The NOAA office provides financial management services for BIS.

4.1.1.3 Supply Chain Management

The business functions included in the Supply Chain LOB are:

- Goods Acquisition – Capital Equipment
- Goods Acquisition – Purchase Card
- Inventory Control
- Logistics Management
- Service Acquisition
- Balanced Scorecard

This business area covers the procurement of goods and services, and the logistical operations to maintain service levels. These business functions are performed by the following operating units:

- US Bureau of the Census
- National Institute of Standards & Technology
- National Oceanic and Atmospheric Administration (NOAA HQ)
- NOAA Central Information Resource Services Home Page
- NOAA Eastern Administrative Support Center
- NOAA Mountain Administrative Support Center
- NOAA System Acquisition Office
- NOAA Western Administration Support Center
- Patent and Trademark Office
- Office of the Secretary

The NIST office also provides services for NTIS and the Technology Administration.
The NOAA HQ office also provides services for ITA, BIS, MBDA, EDA, ESA, BEA, and NTIA.

Acquisition policies and procedures specific to DOC are developed by the Office of the Secretary, Office of Acquisition Management.

4.1.1.4 Administrative Management

The Administrative Management functions cover the following functions:

- Facilities, Fleet, And Equipment Management
- Asset Management
- Help Desk Services
- Travel
- Workplace Policy Development

The DOC is a geographically dispersed organization, both within the Washington, DC area as well as nationwide. Each major campus, such as the Herbert C Hoover Building (HCHB), the Suitland Federal Center, the NOAA Silver Spring, MD campus, the NIST Gaithersburg, MD campus, USPTO in Crystal City, VA, NTIS in Springfield, VA, plus all of the major regional offices, laboratories, and major National Weather Service Centers around the country, provide their own Facilities and Equipment Management Services.

The Office of the Secretary, Office of Administrative Operations provides Fleet Management Services nationwide for the DOC.

Help Desk Services are provided by each operating unit for the support of their user desktop systems and applications. A centralized network operations center for the HCHB provides support for the building-wide network services.

Each operating unit maintains its own asset management system and within DoC guidelines defines the level of detail required for this function. Each asset is labeled with an inventory number and is tracked throughout its service life. Audits are performed annually at a minimum; some operating units perform them as frequently as monthly.

Travel Management is provided by each operating unit. Travel reservation services are provided DOC-wide by a single contract vendor. Accounting for travel is performed locally by each operating unit using the Travel Manager system, which is deployed throughout the DOC.

4.1.2 BEA

BEA produces economic account statistics that enable government and business decision-makers, researchers, and the American public to follow and understand the performance of the Nation's economy. To do this, BEA collects source data, conducts research and analysis, develops and implements estimation methodologies, and disseminates statistics to the public. BEA's core business processes serve as the business drivers that feed BEA's IT Federal Enterprise Architecture (FEA) model at the Business Reference Model segment as depicted in

Data Collection

To produce its estimates, BEA receives source data from many different sources. Chief data sources are the Department of Commerce's Census Bureau and the Department of Labor's Bureau of Labor Statistics. BEA also collects statistical data from other federal and state agencies. This data is also supplemented by data from trade associations, businesses, and other private sources. Data collected from these source agencies and organizations provide the backbone of BEA estimates. With few exceptions, the data collected and used by BEA are collected for purposes other than the preparing economic accounts. Often the data are by-products of government functions such as welfare and social security programs, tax collection, defense, and regulation. For international transactions BEA collect its own data. BEA uses the data collected in compiling the national and international economic accounts; aggregates derived from the reported data are also used by the agencies that are responsible for developing and implementing U.S. Government policies on international trade and investment.
Analysis, Tabulation, and Estimation

BEA transforms the administrative and statistical data it receives from a multitude of sources into a concise and unified package of information on key issues of economic growth, inflation, regional development, and the nation's role in the world economy. Through the various economic accounts, BEA provides a systematic and continuous historical record of the nation's economic operations. In summary, from BEA's four accounts, the following critical economic measures are developed:

- National Income and Product Accounts - Gross Domestic Product (GDP), Gross National Product (GNP), and National Income (NI)
- International Accounts - Balance of Payments (published through a set of partial balance measures), International Investment Position, Direct Investment
- Regional Accounts - Gross State Product, Regional Income and Earnings by Industry and Industry Input-Output Tabulations
- Industry Accounts - GDP-by-Industry Accounts and U.S. Input-Output Accounts

Data Dissemination

BEA data are used in both the public and private sectors to measure and track economic activities such as inflation, production, income, saving and investment. Users in the public sector include government policy makers and federal and state government agencies. In the private sector business, associations, colleges and universities, news media and international organizations use BEA data. BEA disseminates the data to users by various means as follows:

- BEA's web-site (data available in electronically downloadable form)
- News Releases
- Survey of Current Business (BEA's monthly journal of record - now on the Internet)
- Recorded messages accessible via telephone
- Various CD-ROM publication

4.1.3 BIS

The BIS Business Architecture contains 6 high-level Business Areas:

Table 3 – BIS High Level Business Areas

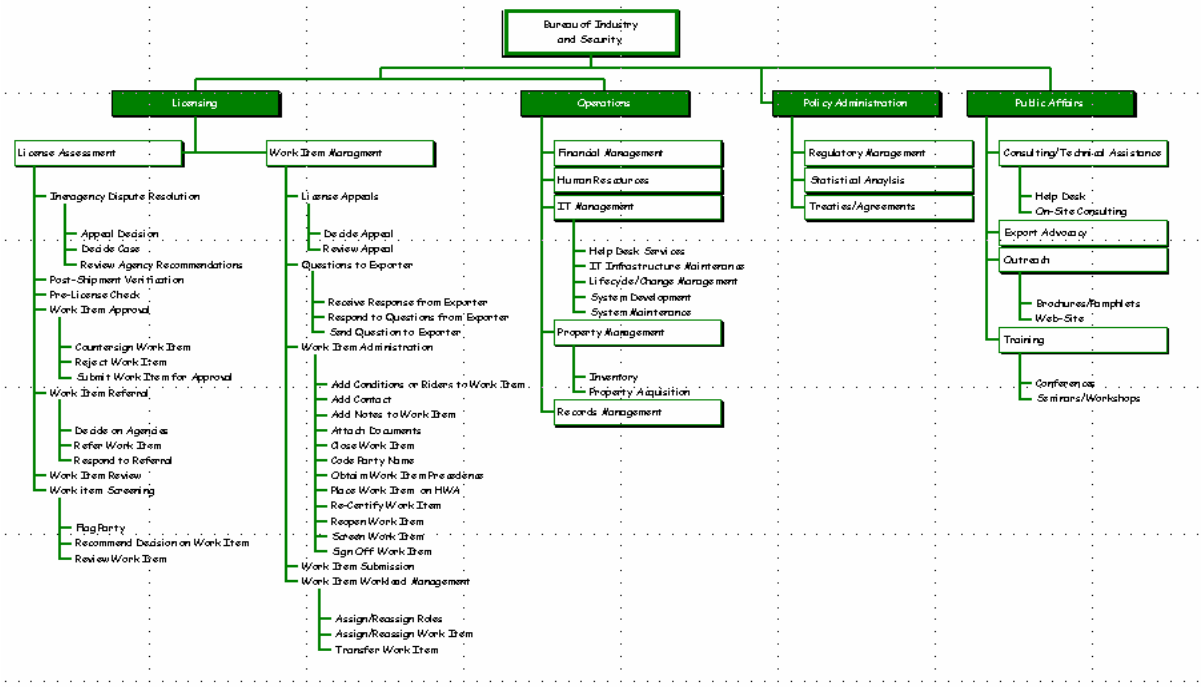
1. Licensing	2. Operations
3. Policy Administration	4. Public Affairs
5. Control and Oversight	6. Enforcement

Within each Business Area, functions describe the services BIS provides to the public (e.g., Export License Application Processing, Investigations into violations of export policy, as well as the internal operations necessary to run the organization such as property management or financial management).

The BIS Business Baseline Architecture contains 21 business functions grouped below by high level business area. These functions will form the basis of the BIS Service Component Reference Model (SRM) Alignment.

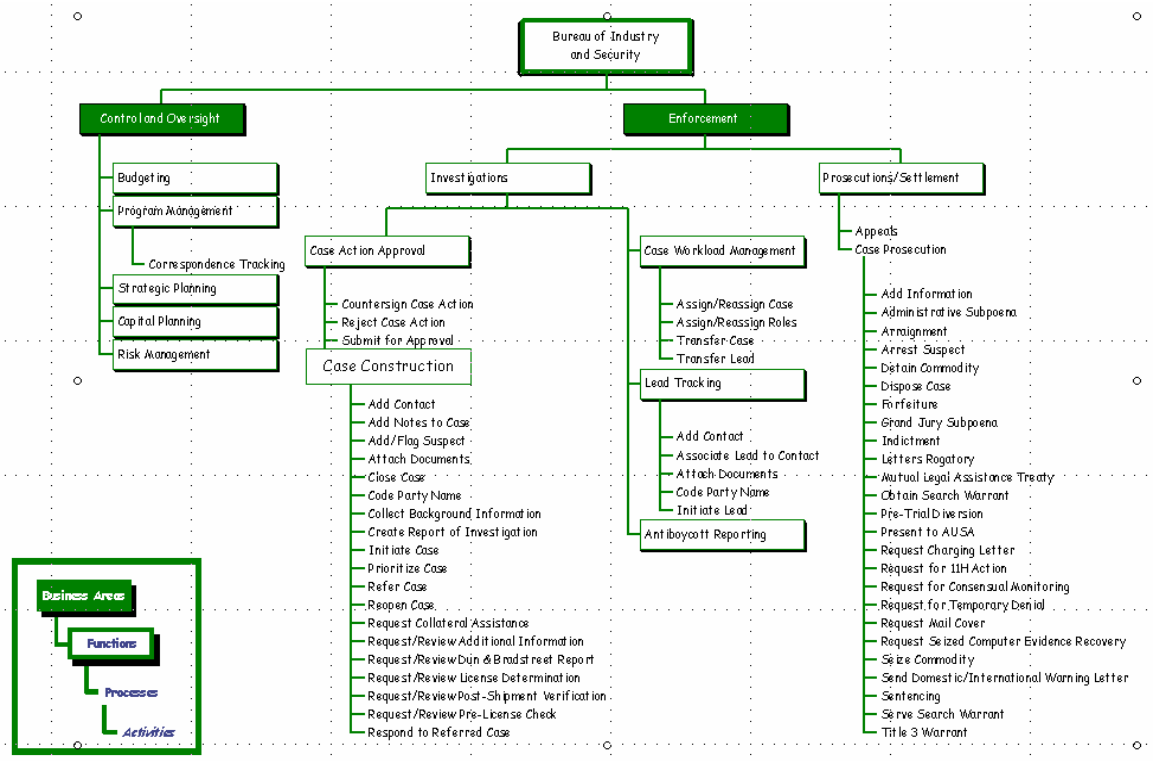
The Licensing, Operations, Policy Administration, and Business Area Functions are composed of the functions and process pictured below. The table presents 4 of the 6 high-level business areas and their respective functions and processes

Table 4 – BIS Business Areas



The Control & Oversight, and the Enforcement business areas and their respective functions and processes are portrayed below

Table 5 – BIS Business Areas



4.1.4 Census Bureau

The Census Bureau is the largest statistical agency of the federal government. While best known for the decennial census, it conducts numerous surveys and censuses that measure changing individual and household demographics and the economic condition of the nation. Products and services include:

Censuses:

- The decennial census is the nation's oldest and most comprehensive source of population and housing information.
- Every 5 years, the economic census provides a detailed portrait of the nation's economy.
- The census of governments covers government organization, public employment, and government finance.

Surveys:

- Demographic: The Census Bureau conducts household and institutional surveys, many of which are sponsored by other federal agencies and measure income, poverty, education, health care coverage, crime victimization, computer usage, and scores of other subjects that are vital to understanding the people of the United States.
- Economic: Monthly, quarterly, and annual surveys yield information on the current state of the economy. Census Bureau economic surveys provide a majority of the information that other agencies use to update Gross Domestic Product accounts, to report monthly Producer Price Index changes, and to produce indices of industrial production and capacity utilization.

International activities:

- The Census Bureau develops and maintains a comprehensive international demographic and socioeconomic database.
- The Census Bureau provides technical advisory services for foreign governments, including developing and implementing statistical programs for censuses and surveys, conducting training, and developing statistical software and methodology.

General activities:

- The Census Bureau produces official population estimates and projections and yearly inventories of governmental unit boundaries.
- Continuing research on statistical standards and census and survey methodology contributes not only to improvements in the work of the Census Bureau, but also to the bodies of statistical, economic, and demographic knowledge.
- Ongoing evaluations supply the feedback needed to keep data collection activities relevant.

4.1.5 EDA

The Economic Development Administration manages the following programs as their mission business functions:

Public Works

The Public Works Program empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term, private sector jobs and investment.

Economic Adjustment Assistance Program

The Economic Adjustment Program assists state and local interests to design and implement strategies to adjust or bring about change to an economy. The program focuses on areas that have experienced or are under threat of serious structural damage to the underlying economic base.

Research and National Technical Assistance

The Research and Technical Assistance Program supports research of leading edge, world class economic development practices as well as funds information dissemination efforts.

Local Technical Assistance

The Technical Assistance Program helps fill the knowledge and information gaps that may prevent leaders in the public and nonprofit sectors in distressed areas from making optimal decisions on local economic development issues.

Partnership Planning

EDA's Partnership Planning programs help support local organizations (Economic Development Districts, Indian Tribes, and other eligible areas) with their long-term planning efforts and their outreach to the economic development community on EDA's programs and policies.

University Center

The University Center Program is a partnership of federal government and academia that makes the varied and vast resources of universities available to the economic development community.

Trade Adjustment Assistance

EDA uses a national network of twelve Trade Adjustment Assistance Centers to help manufacturers and producers affected by increased imports prepare and implement strategies to guide their economic recovery.

4.1.6 ESA

The Economics and Statistics Administration provides crucial economic analysis to the Secretary of Commerce, as well as the general public, through its daily activities and periodic reports and publications in support of the country's economic growth and development.

ESA's Services for Citizens Business Area falls under the Economic Development Line of Business, which includes the activities required to promote commercial/industrial development and to regulate the American financial industry to protect investors. It also includes the management and control of the domestic economy and the money supply, and the protection of intellectual property and innovation.

4.1.7 ITA

The International Trade Administration (ITA) is committed to free and fair trade by opening foreign markets through negotiations, assessing domestic and international competitiveness, promoting trade, delivering export assistance, and ensuring fair competition and compliance with international trade agreements. ITA supports the Department of Commerce's mission of creating the conditions for economic growth and opportunity by offering a variety of products and services to the U.S. exporting community. ITA's three performance goals tie directly to the Department's strategic goals and objectives.

Business Customers are the users of ITA's products and services: the entities around whom ITA organizes its processes and resources. Examples include:

- U.S. Businesses, particularly small and medium-sized enterprises.
  - Exporters including:
    - Planning-to-Export
    - New-to-Market
    - Sustained Market
  - Investors
  - Domestic Industries

- Representatives of U.S. Businesses including legal, trade associations, intermediaries, ISAC's, IFACs, and other service providers.
- Foreign Importers
- Foreign Participants to unfair trade proceedings

Products and Services

ITA has recently compiled an inventory of over eighty existing products and services. Based on this inventory, three major product and service families were identified:

- Information and Education
- Navigating the Export Process
- Ensuring Fair Trade and Market Access

Product and Service delivery channels were also discussed and the types of products and services best suited to each type of channel were identified. As channels have specific implications for technologies, selecting technologies that will have the greatest impact on the largest number of product and service delivery options is one way to prioritize or strategize technology investments

4.1.8 MBDA

MBDA is addressing challenges faced by Minority Business Enterprises by developing programs that provide the "keys to entrepreneurial success":

- Access to financing
- Access to the marketplace
- Access to education
- Access to technology

The table below shows the programs and services provided by MBDA.

Table 6 – MBDA Programs and Services

Office of Business Development

Grants
- Grants Management
- Grants Liaison

Access to Capital/Markets
- Outreach, development and management of strategic alliances (i.e. corps, government)
- Venture Capital Program
- Angel network development

E-Commerce
- Virtual BDC
- Performance
- E-functions
- Content, business development
- Locations (business, capital, etc.)

NBDS-Business Brokering
- Deal Facilitation
- Business vetting
- Government Liaison

Entrepreneurial Development Services

Advocacy & Marketing
- MED Week
- Media
- Research Development

MBDC and MBOC
- Establish program policy
- Provide program guidance
- Tech Assistance
- Field/Headquarters Liaison
- Training/Resource Development

Youth Entrepreneurship
- Maintenance and Existing Program
- Exploration of National Program
- Advocacy

4.1.9 NIST

From automated teller machines and atomic clocks to mammograms and semiconductors, innumerable products and services rely in some way on technology, measurement, and standards provided by the National Institute of Standards and Technology. The wide range of NIST products and services are developed and/or delivered through the programs below:

- NIST Laboratories, conducting research that advances the nation's technology infrastructure and is needed by U.S. industry to continually improve products and services;
- The Baldrige National Quality Program, which promotes performance excellence among U.S. manufacturers, service companies, educational institutions, and health care providers; conducts outreach programs and manages the annual Malcolm Baldrige National Quality Award which recognizes performance excellence and quality achievement;
- The Manufacturing Extension Partnership, a nationwide network of local centers offering technical and business assistance to smaller manufacturers; and
- The Advanced Technology Program, which accelerates the development of innovative technologies for broad national benefit by co-funding R&D partnerships with the private sector.

The table below shows the NIST functions along with the goals and product focus for each.

Table 7 – NIST Functions and Goals

NIST Structure, Functions, and Strategic Direction

NIST STRUCTURE & FUNCTIONS		STRATEGIC DIRECTION	
Pro-gram	Core Functions	Strategic Goals	Research / Technology Focus Areas
Laboratories	Traceability to the seven basic measurement units, measurement and test methods, calibration services, Standard Reference Materials, evaluated scientific data, impartial expertise and leadership in standards development, and research in support of these areas	1. Research and develop the measurements and standards needed to support emerging science and technology-intensive industries	Health care quality assurance
			Nanoscale measurements and data
			Information / knowledge management
		2. Develop and efficiently disseminate the measurements and standards needed to support the nation's strategic interests in homeland security	Cyber security and critical infrastructure protection
			Chemical, biological, radiological, nuclear, and explosives detection and security
		3. Assure the availability and efficient transfer of measurement and standards capabilities essential to established industries	Physics, chemistry, materials, electrical, manufacturing, IT, building and fire
ATP	R&D grants to industry and universities	4. Accelerate private investment in and development of high-risk, broad-impact technologies	Broad array of generic technologies (determined through grant competitions)
MEP	Technical assistance to smaller manufacturers	5. Raise the productivity and competitiveness of small manufacturers	Generic technologies for production processes and supply chain integration
Baldrige	Framework for evaluating and improving organizational quality and performance, and an award program to recognize role models	6. Catalyze and reward quality and performance improvement practices in U. S. businesses and other organizations	Multi-sector: business, education, health care, not for profit

4.1.10 NOAA

NOAA' Baseline Information Technology (IT) Architecture has contributed to many of NOAA's major accomplishments. A summary of NOAA's Baseline Architecture is described below and is categorized by NOAA's Mission Goals.

Ecosystems

Leadership in Global Earth Observing
NOAA continues to exercise international leadership in the development of a coordinated, comprehensive and sustained Global Earth Observation System of Systems (GEOSS), including playing a key role in the developing the draft Strategic Plan for the U.S. Integrated Earth Observation System.

Mapping, Monitoring and Managing Coral Reef Ecosystems
NOAA, in collaboration with state and territory partners and other Federal agencies has begun to implement a coherent ecosystem approach to management of U.S. coral reefs, through coordinated monitoring, mapping, research, and management efforts.

Climate

Comprehensive Large Array-data Stewardship System (CLASS)
NOAA developed CLASS to archive and provide access to the data from current satellite-based observing systems and ground based observing systems. CLASS is an electronic library of NOAA environmental data. . **CLASS serves as the foundation of NOAA's Target Data Architecture.**

Critical Climate Forecast System Becomes Operational
]NOAA implemented a new global ocean and atmosphere Climate Forecast System (CFS). The CFS is a coupled model approach, representing the interaction between the Earth's oceans and the atmosphere.

Completion of Model Runs for International Climate Assessment
NOAA completed projections for the upcoming Intergovernmental Panel on Climate Change Scientific Assessment of Climate using a new coupled atmosphere ocean-land model. The new model was produced by the Geophysical Fluid Dynamics Laboratory and incorporates finer spatial resolution and better representation of processes affecting climate.

Weather & Water

Floods, droughts, hurricanes, tornadoes, tsunamis, and other severe weather events cause $11 billion in damages each year in the US. Weather is directly linked to public safety, and nearly one-third of the US economy (Approx. $3 trillion) is sensitive to weather and climate. With so much at stake, NOAA's role in understanding, observing, forecasting, and warning of environmental events is expanding. With our partners, we seek to provide decision makers with key observations, analyses, predictions, and warnings for a range of weather and water conditions, including those related to water supply, air quality, and space weather. Businesses are getting more sophisticated about how to use this weather and water information to improve operational efficiencies, to manage environmental resources, and to create a better quality of life. The Weather and Water program provides decision makers with key

observations, analysis, predictions, and warning for a range of weather and water conditions, including those related to water supply, air quality and space weather. The Weather and Water Mission goals are:

- Greatly reduce loss of life and injury due to weather and water
- Enable communities threatened by weather and water hazards to take mitigating actions well in advance of events
- Alert economic and resource management sectors about weather and water risks with sufficient lead time to take action to avoid or greatly reduce costs

The Weather and Water program is structured to serve society's needs for weather and water information. The baseline architecture is designed to observe predict and deliver information about:

- Air Quality
- Coasts, Estuaries, and Oceans
- Environmental Modeling
- Hydrology-Rivers, Lakes, and Floods
- Local Forecasts and Warnings
- Space Weather
- Weather, Water Science and Technology Infusion

Commerce & Transportation

Harmful Algal Bloom Early Warning System
NOAA announced in September a new ecological forecast system for harmful algal blooms (HABs) in the Gulf of Mexico which became operational on Oct. 1, 2004.The system produces information daily, and forecasts at least twice weekly, which can be used to determine the current and future location and intensity of blooms and the likely impacts to the environment.

Three Million Navigation Charts Served, and Counting
The 3,000,000th Electronic Navigational Chart (ENC) was downloaded in July 2004. NOAA ENCs are perhaps the most critical component of NOAA's navigation tools – part of a suite of navigation products and services which help ensure the safety of marine transportation, while improving the economic efficiency and competitiveness of American commerce.

NOAA Programs Partner to Improve GPS Information
The Geodesy Program partnered with NOAA's Space Environment Center (SEC) to incorporate Continuously Operating Reference Stations (CORS) data into ionospheric models. The ionosphere distorts Global Positioning System (GPS) signals coming down from space satellites to receivers on the Earth. Because highly accurate models of this phenomenon do not currently exist, NOAA's Geodetic Survey (NGS) is investigating how information about the ionosphere can be derived from CORS, which gather GPS data 24 hours, 7 days a week. With this work, both military and civil users will be able to employ GPS data with greater accuracy in less time.

SARSAT Saves 220 Lives
NOAA's Search and Rescue Satellite Aided Tracking (SARSAT) System aided in rescuing more than 220 lives in U.S. waters and across the country. The system uses NOAA satellites in low earth and geostationary orbits to detect and locate aviators, mariners, and land based users in distress. The

satellites relay distress signals from emergency beacons to a network of ground stations and ultimately to the U.S. Mission Control Center (USMCC) in Suitland, Maryland. The USMCC processes the distress signal and alerts the appropriate search and rescue authorities to who is in distress and, more importantly, where they are located.

Mission Support

Critical Environmental Satellite Support for the Nation
For special hurricane support, our satellite operations were reconfigured to provide rapid scan 5-minute imaging for an unprecedented full week, with a 99.9% delivery rate for 584 images during hurricane Frances and a 100% delivery rate for 469 images during hurricane Charlie. Overall, NOAA's Satellites provided 12 months of nearly flawless operation of three satellite constellations consisting of 17 spacecraft. NOAA had a 99.5% success rate for providing mission critical data satisfying customer requirements. NOAA's GOES and POES satellites as primary observing systems are a key component of NOAA's Data and Infrastructure Architectures.

Improving the NOAA Grants Process
Significant improvements made in the NOAA grants process in FY04 have led to more timely awards and fewer awards at the end of the fiscal year. Development and implementation of Grants Online resulted in NOAA being first agency to receive electronic applications through the Grants.gov portal, and Grants Online was selected as a finalist in the 2004 Excellence.Gov awards. During FY 2004, NOAA made on time grant awards worth almost $972,000,000 to 1501 recipients. The Grants Online Project Team is working in conjunction with and support of the President's E-Grants Initiative and is an excellent example of how NOAA's Enterprise Architecture supports the President's Management Agenda.

4.1.11 NTIA

NTIA represents the Executive Branch in both domestic and international telecommunications policy activities, manages the Federal use of the spectrum; and performs cutting-edge telecommunications research and engineering, including resolving technical telecommunications issues for the Federal government and private sector.

Domestic Policy

NTIA serves as the principal Executive branch adviser to the President on domestic and international communications and information policies. To fulfill this responsibility, NTIA develops and articulates Administration policies on domestic telecommunications policy issues; analyzes and proposes Administration positions on legislation and regulations; and represents the Administration in policy forums, conferences, and symposia.

International Policy

Conducted by NTIA's Office of International Affairs, OIA, acts as an advocate of U.S. commercial interests overseas. OIA promotes the need for competition and liberalization of telecommunications and information policies around the world. OIA's goal is to provide policy analyses, technical

guidance, and representation in international fora, so as to advance the strategic interests and the international competitiveness of the United States before a diverse, world-wide audience. OIA's wide variety of activities are designed to further advance and promote these U.S. interests by advocating: 1) telecommunications and information standards consistent with U.S. objectives; 2) regulations governing the international use of the radio frequency spectrum; 3) regulatory policies pertaining to the provision of information and telecommunications services both within and between U.S. and foreign markets; and, 4) the deployment of new technologies in these markets, to improve global communications and expand trade opportunities for our citizens.

OIA advocates Executive Branch policy perspectives in bilateral and multilateral consultations with foreign governments, in international regulatory conferences, and in other fora dealing with Global Information Infrastructure issues. Specific oversight responsibilities include, in cooperation with the State Department and with the FCC, the COMSAT Corporation's activities in the International Telecommunications Satellite Organization (INTELSAT) and the International Mobile Satellite Organization (Inmarsat), along with other developments in the satellite industry.

To improve U.S. competitiveness in international markets, OIA provides policy and technical counsel to diverse U.S. interests. OIA helps NTIA in its mission to champion greater foreign market access, by: 1) advocating competition and liberalization of telecommunications and information technology policies around the world; 2) participating in international government-to-government negotiations to open markets for U.S. companies; and 3) negotiating with foreign governments to ensure that there is adequate spectrum for national defense, public safety, and U.S. business needs.

OIA also provides information to the general public on a wide variety of telecommunications and information policy subjects, with links to foreign telecommunications ministries and licensing authorities.

Spectrum Management

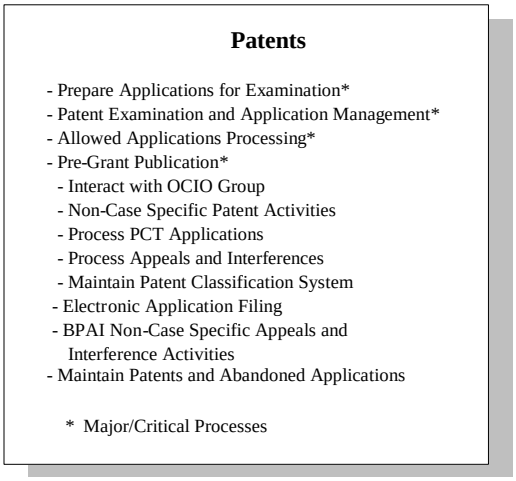
NTIA coordinates Federal Government use of the electromagnetic spectrum. Additionally, NTIA coordinates Federal Government policies regarding spectrum use, planning, emergency operations and international coordination of government satellite systems; manages the Federal radio spectrum necessary for national defense, public safety, air traffic control, national resource management and other critical government functions; and prepares and coordinates Federal Government proposals for ITU World Radio Conferences and related technical meetings. Major issues include spectrum management reform, negotiations regarding the integration and interference protection for satellite systems (GPS and GLONASS) that will support the evolving Global Navigation Satellite system for air traffic control, and addressing the public safety spectrum requirements through the year 2010 through the joint FCC/NTIA Public Safety Wireless Advisory Committee. In support of this mission, NTIA‘s Office of Spectrum Management (OSM) performs analysis, engineering, and administrative functions, including the maintenance of necessary files and databases.

Much of OSM‘s activity is classified and thus beyond the scope of this document. However OSM does produce unclassified studies and reports and spectrum models 20 used by other NTIA programs in policy analysis and formulation and by other Federal Agencies in their spectrum planning activities.

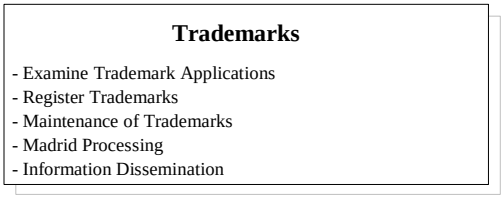
4.1.12 USPTO

Currently, the USPTO's business architecture is based on its organizational structure instead of a decomposition of business functions (i.e., lines of business (LOB)). Therefore, the USPTO essentially identifies its Business Areas as USPTO LOB. The two primary Business Areas for the USPTO are the Patents Business Area and the Trademarks Business Area. These Business Areas are the revenue-generating entities of the organization and employ the majority of the workforce at the USPTO.

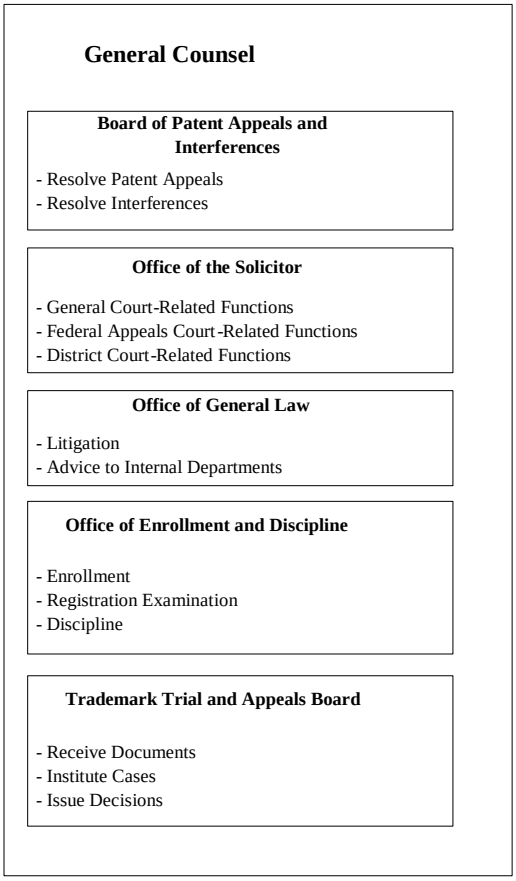
Patents. One of the primary tasks of the USPTO is the examination and issuance of patents. This is accomplished by the Patents Business Area. Patents functions include patent application examination, management of these applications, and issuance of patents to protect intellectual property rights. The Patents Business Area is the largest area within USTPO and is composed of approximately 5,000 employees and over 1,500 contractors/vendors. This business area is has seen a rapid growth in applications in recent years, due in part to the continual advances in the technology sector, but also due to advances in the biomedical sciences and the pharmaceutical industries



Trademarks. Strong trademark protection is very important to a successful business. Unlike patents, trademark registrations are renewable for as long as the product or service they identify is offered for sale. The rise of global communication networks and easily accessible commercial markets significantly increases the importance of obtaining trademark protection for even the smallest companies. The Trademarks Business Area is responsible for reviewing trademark applications and determining whether an applicant meets the requirements for registration. The Trademark examiners do not decide if an applicant has the right to use a mark, just if the mark can be registered. Through the registration of trademarks, the USPTO assists businesses in protecting their investments, promoting goods and services, and safeguarding consumers against confusion and deception in the marketplace. The Trademarks Business Area employs approximately 550 employees and, in addition, uses outside contractors and vendors to perform its functions.



Office of the General Counsel The Office of General Counsel (OGC) performs multiple functions. Primarily it assists the USPTO in all legal issues related to Patent and Trademark Applications. The OGC consists of five areas:



- **Board of Patent Appeals.** The Board of Patent Appeals and Interferences (BPAI) perform two main functions: review adverse decisions by patent examiners, and determine priority (decide who the first inventor is) for patent filings. The BPAI is a very important Business Area for the OGC and Patents due to the nature of their function and the regulatory control. Approximately 60 Administrative Patent Judges (APJ) perform the above-mentioned functions.

- **Trademark Trials and Appeal Board.** The Trademark Trials and Appeal Board (TTAB) is an administrative tribunal that decides ex-parte appeals and inter-partes cases filed before the USPTO. It decides appeals in trademark application cases, and issues decisions in inter-partes cases involving trademark applications and registrations.

- **Office of Enrollment and Discipline.** The Office of Enrollment and Discipline (OED) is responsible for registering patent attorneys and agents, investigating complaints alleging unethical conduct by registered attorneys, and administering examinations to determine if applicants have the necessary knowledge of patent law to become registered patent attorneys.

- **Office of the Solicitor.** The Office of the Solicitor (SOL) provides legal counsel to the USPTO on all intellectual property matters. Its primary functions are to defend decisions made by the Director, the BPAI, the TTAB, and Patent and Trademark examiners. In addition, it monitors publication of all USPTO decisions and works with the OED to review and draft the content of application registration exams.

- **Office of General Law.** The Office of General Law (OGL) supports the USPTO in all non-intellectual property legal matters. Any legal matter that is not intellectual property related is under the purview of OGL. It provides advice and representation to the USPTO in front of agencies like the Equal Employment Opportunity commission, and the Merit Systems Protection Board. An important task of OGL is to oversee all FOIA (Freedom of Information Act) requests and appeals.

4.2 Data Architecture

The current data architecture is based on the FEA Data Reference Model. It is still being developed. What follow below is the major classifications.

Table 8 – Data Architecture Major Classification

Line of Business	Subject Area	Super Type	Sub-Type
Management of Government Resources	Financial Management	BUDGET & FINANCE	Deposits
			Payments
			General Ledger
			Disbursements
	HUMAN RESOURCES	EMPLOYEE RECORDS	Payroll
			People
			Personnel Actions
			Personnel Performance
			Time And Attendance
		Administrative	Benefits Management
			Pay Guidance
			Equal Employment Opportunity
		Recruiting & Training	Positions
			Security Clearance Management
			Training
	Administrative Management	Records Management	Information Quality
			Retention Criteria
		Property Management	Assets
			Classifications
			Lifecycle Management
			Security
			Policy
	Supply Chain Management	Procurement	Purchase Order
			Services Contracts
		Inventory Control	Assets
			Licenses
			Portfolio

The following figure is the NOAA Observing System Entity-Relationship diagram that provides a conceptual view of the data architecture for this operating unit

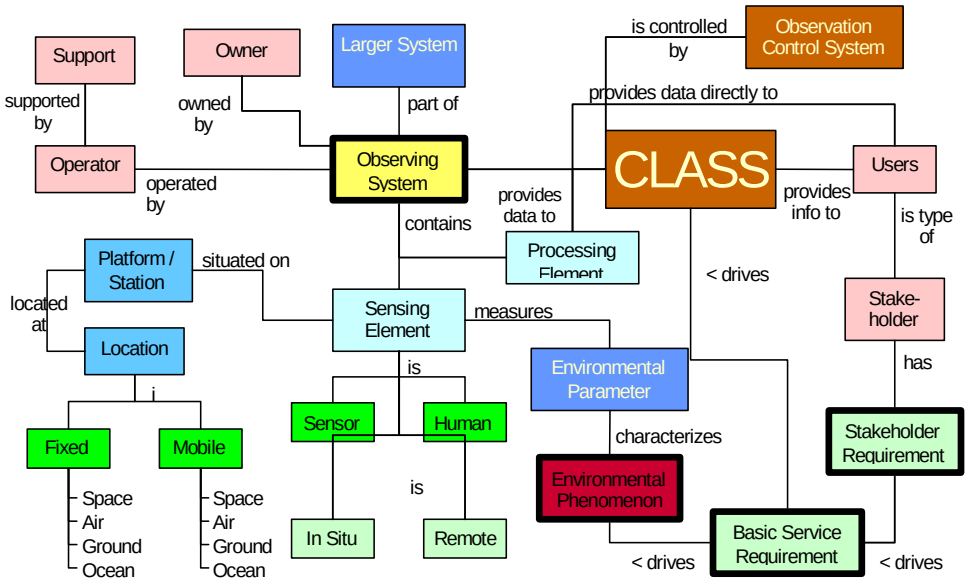


Figure 2 NOAA Observing System Architecture Entity-Relationship Diagram

DOC is building the Data Architecture in accordance with the FEA DRM, and will continue to expand the depth and detail as the DRM is developed.

4.3 Applications Architecture

4.3.1. Human Resources

OHRM's "general support" systems are maintained on OHRM's privately owned Web servers. Other "major application systems" that include HRDS (for HR reporting), the COOL system (for Web enabled recruitment), our demonstration project (pay band) systems, and our Web enabled Time and Attendance System (WebTA) are hosted in Computer Centers managed by the OCIO or the Bureau of the Census' Bowie Computer Center. Virtually all of OHRM's systems and applications are Web based systems that are accessible using the Internet (or Department's Intranet) using a Web browser. These Web based systems have been designed as 3-Tier Web applications with databases that are either written in Oracle programming language or a compatible software product. In addition, most of our systems use "relational" databases, where commonalities among the data is identified and arranged in easy to access tables and files that make for efficient application processing. Typically, a combination of Java programming language in concert with Active Server Pages (ASP) and HTML language is used to establish the Web page and attendant links or programs.

It should be noted that the 3-tier architectural model allows us to build systems where the confidential information (or data) is separated from the functional process (or business logic) and the visual presentation (user interface). Applications that use a 2-Tier concept cannot separate their business processes from their data storage, so that they do not have effective mechanisms to secure confidential data sets. Relational databases are highly recommended for instance, such as for HR data, where large quantities of data must be compiled quickly.

Several older systems still utilize the 2-Tier concept. The Worker's Compensation System (WCS), which is an old legacy system, designed in the early 1990's, uses client server technology. Ultimately, we plan to sunset this system and merge the functionality of this system, particularly as it relates to safety management, with the deployment of our new HR reporting system. In addition the Reemployment Priority and Priority Placement Lists (RPL and PPL), which are used for reduction-in-force and outplacement initiatives, are resident on the OCIO's computer center mainframe and written in Model 204. The RPL and PPL are relatively small applications and are being considered for a rewrite as a Web application.

OHRM also manages several stand-alone efforts that are obtained via service agreements through hosting parties. These include Employee Express and the NFC, both accessible using the Web, and our Talx software (which is phone enabled) that provides employment data to mortgage companies. A majority of OHRM's Web based systems are housed on OHRM's three privately owned Dell PowerEdge 2400 Web servers. These Windows 2000 servers house COMPAS, demonstration project systems, HRDS system administration, the OHRM Web pages, and several other SES applications. These systems utilize Oracle or Oracle compatible databases and are tied into the Department's overall network infrastructure. The database type is typically relational. Typically, a combination of Java programming language in concert with Active Server Pages (ASP) and HTML language is used to establish the Web page and attendant links or programs.

4.3.2. Financial Management

The Core Financial Management system is the primary component of the Commerce Business System (CBS), and provides the following applications:

- General Ledger
- Accounts Payable
- Accounts Receivable / Reimbursable Agreements
- Cost Accumulation
- Budget / Funds Management
- Financial Reporting

Each of these applications interoperates against the same data source and is fully integrated with each other.

4.3.3 Supply Chain Management

The Commerce Standard Acquisition and Reporting System (CSTARS) is an enterprise-wide procurement system supporting the underlying standard acquisition business process for the Department of Commerce. CSTARS is an IT-enabled tool that DoC acquisition professionals use to provide the highest level of customer service for acquiring products and services. CSTARS is currently in production at the Office of the Secretary (OS), National Institute of Standards and Technology (NIST), National Oceanic and Atmospheric Administration (NOAA) and the Bureau of the Census (BOC). CSTARS can be used to create requisitions, review and approve documents, create purchase requests, build procurement plans, manage vendors - utilizing the Central Contractor Registry, create solicitations, create awards, provide reports, and monitor workload.

The Business Opportunities Page (BOP) - The OAMFA Business Opportunities Page (BOP) server provides a web-based interactive project board to keep vendors and contractors apprised of COMMITS GWAC contract activities. The BOP was developed to enable the Office of Acquisition Management to communicate business opportunities within the COMMITS GWAC to business partners. OAMFA plans to re-initiate maintenance and support of the BOP to support the soon-to-be underway COMMITS-NG program that replaced the original COMMITS.

The Balanced Scorecard (BSC) - The BSC is used to measure the performance of the Department's acquisition community. The BSC extracts quantitative procurement data from the DW (through FY 2003) using an automated process. The BSC integrates training metrics from the Acquisition Workforce database. A survey tool collects the qualitative data. The qualitative and quantitative data is then used to measure the accomplishments of the operating units within the acquisition community. The BSC includes several component sub-systems that share the same platform and application base and provide integrated data into the BSC. Operational and planned elements of the BSC include:

The Grants Balanced Scorecard (GBSC) - OAMFA implemented a performance management tool entitled BSC. The BSC is a multidimensional framework for describing, implementing and managing activities at all levels of an organization by linking objectives, initiatives and measures to the organizations strategy. The scorecard provides an enterprise view of an organization's overall performance by integrating financial measures with other key performance indicators related to customer perspectives, internal business processes, and organizational growth, learning and innovation. The DOC Grants office will develop performance indicators appropriate to their processes and strategies to incorporate the Grants operation into the BSC.

Enterprise Acquisition Reporting System (EARS) - OAMFA provides a wide array of acquisition services and has become the fulcrum for new eCommerce and eGovernment initiatives in Commerce. To provide effective customer support, OAMFA needs information technology that integrates information among current systems such as Commerce STandard Acquisition and Reporting System (CSTARS), the Federal Procurement Data System-Next Generation (FPDS-NG), the Consolidated Reporting System (CRS), the Balanced Scorecard System (BSC) and the Federal Assistance Award Data System (FAADS). To improve service and set the stage for future eGovernment initiatives, OAMFA offers its business users a reporting environment through data warehouse and web technologies. This environment supports interactive query, analysis, as well as presentation of procurement, contract, accounting, and other related business activities.

The Competitive Sourcing Database (CSD) - The President's performance goals and management initiatives include a requirement to develop "more accurate FAIR Act inventories" and "expand A-76 competitions." The Competitive Sourcing Database is intended to extend additional oversight to improve these inventories and assure competitions are being executed in a timely manner and in accordance with A-76 rules.

The OAMFA Web Pages - The U.S. Department of Commerce (DOC) Office of Acquisition Management and Financial Assistance (OAMFA) implemented the OAMFA Web Pages to support the acquisition community as business brokers for program success. The OAMFA Web Pages software application and data are planned to reside at and operate from a secure government

facility, the Office of the Secretary's Office of Computer Services data center in Springfield, Virginia. The Commerce STandard Acquisition and Reporting System (CSTARS) - is an enterprise-wide procurement system providing a standard business process for the Department of Commerce acquisition workforce. CSTARS is used by all DOC Contracting Officers and Contract Specialists.

4.3.4. Administrative Management

The Federal Real Property Management System (Federal RPM) replaced the Commerce Real Estate and Space Management System (RSMIS) in September 2003. Federal RPM is an Oracle-based real property management, accountability, and financial depreciation reporting system. Data is entered into the application across a secure web interface using Citrix Thin Client with a dual password user ID authentication from the User PC or System Administrator's desktop..

Federal RPM is fully operational by all of its major users: the O/S Office of Real Estate Policy and Major Programs, NOAA's Facility Management Division, all four of NOAA's Administrative Support Centers (ASCs), the Census Bureau, and the National Institute of Standards and Technology (NIST). We would like to expand use of the system in future years, which will require the creation and use of new User Interfaces.

Facilities Information System (FIS) is a client/server application used to record square footage and lease cost of the building and rooms down to the level of furniture location within the room. The system stores AutoCAD architectural drawings and related facility information in an Oracle database.

The application was successfully moved out of the HCHB in FY03 to the Office of Computer Services in Springfield, VA, where it is now operated and maintained.

Personal Property Management System (PPMS) was approved for acquisition in September 2001. It was designed to provide strong personal property accounting functionality with a financial interface. The PPMS is an Oracle-based, web-enabled system with real-time data entry.

FY 2004 initiatives include completion of electronic forms, an electronic interface with CAMS, NOAA Warehouse Electronic Excess, Hierarchal Structure Business Rules (User Defined Reports), and incorporation of 4 non-Sunflower DOC Operating Units into the Data Warehouse. NTIA was successfully converted to Sunflower in FY 2003. The electronic interface with CAMS is pending approval by the Office of Financial Management (OFM) for FY 2004 implementation.

Work Request System (WRS) is a web-based application to manage work requests. It replaces the CD-410 Tracker System that was housed on the old Banyan System that has now been terminated.

The WRS maintains information about incoming requests and allows requests to be assigned to an organization or individual. Work requests may be broken into components, and the components may be assigned to organizations or individuals.

Office Tracker Conference Scheduling System is a client/server application used to schedule meetings, conference rooms, the Main Lobby and the Auditorium. The system stores reservation information, attendee lists, meeting equipment lists, and agenda notes in a SQL server database.

4.4. Infrastructure Architecture

The DOC Infrastructure includes campus or building-wide networks that are interconnected to provide access to all DOC applications and IT services.

NOAA being one of the largest of the DOC operating units has a very complex network architectures as shown in the figure below.

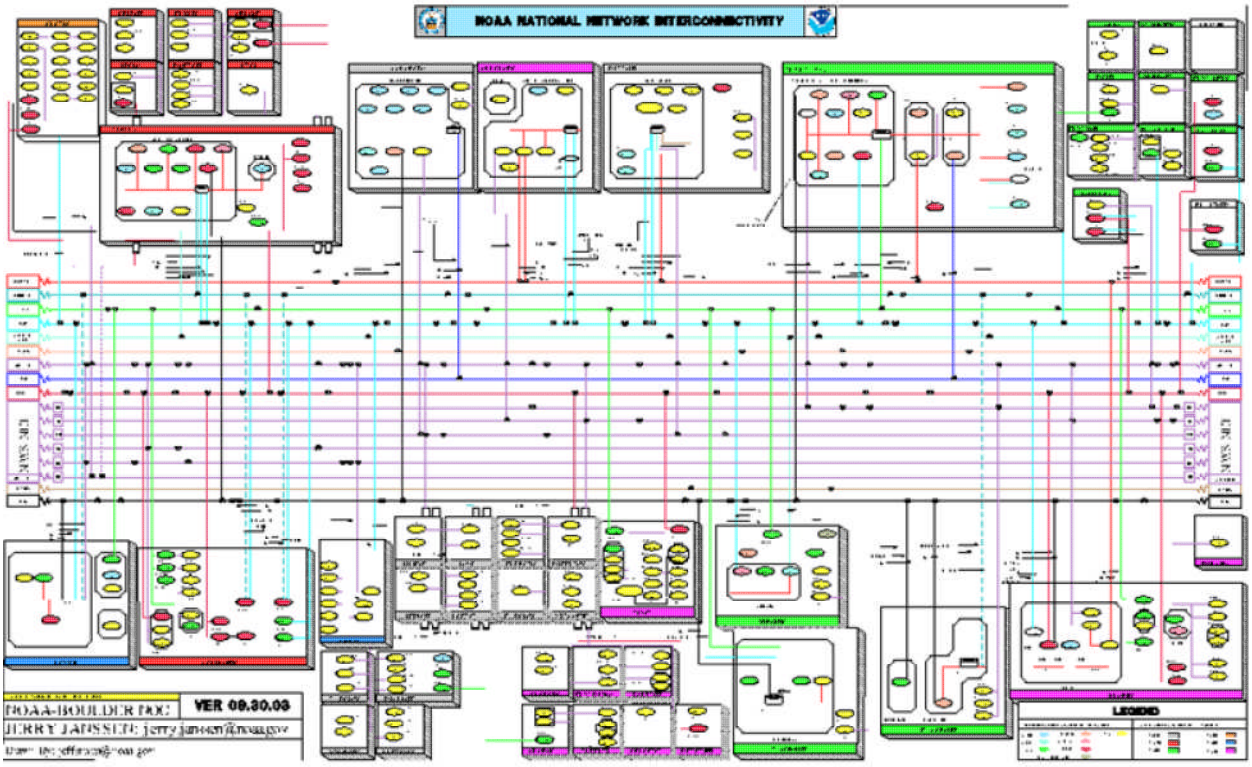


Figure 3 NOAA Baseline Network Architecture

At the department level the infrastructure includes campus or building-wide networks that are interconnected to provide access to all DOC applications and IT services.

4.4.1. OHRM

A majority of OHRM's Web based systems are housed on OHRM's three privately owned Dell PowerEdge 2400 Web servers. These Windows 2000 servers house COMPAS, demonstration project systems, HRDS system administration, the OHRM Web pages, and several other SES applications. These systems utilize Oracle or Oracle compatible databases and are tied into the Department's overall network infrastructure. The database type is typically relational. Typically, a combination of Java programming language in concert with Active Server Pages (ASP) and HTML language is used to establish the Web page and attendant links or programs.

Figure 11 shows the interrelationships between the set of Web servers, and the alternate systems that are used to house OHRM systems. Server systems are not integrated with any system housed at

a hosting site. All data transfer is accomplished using data downloads from either the NFC or the HRDS Oracle database.

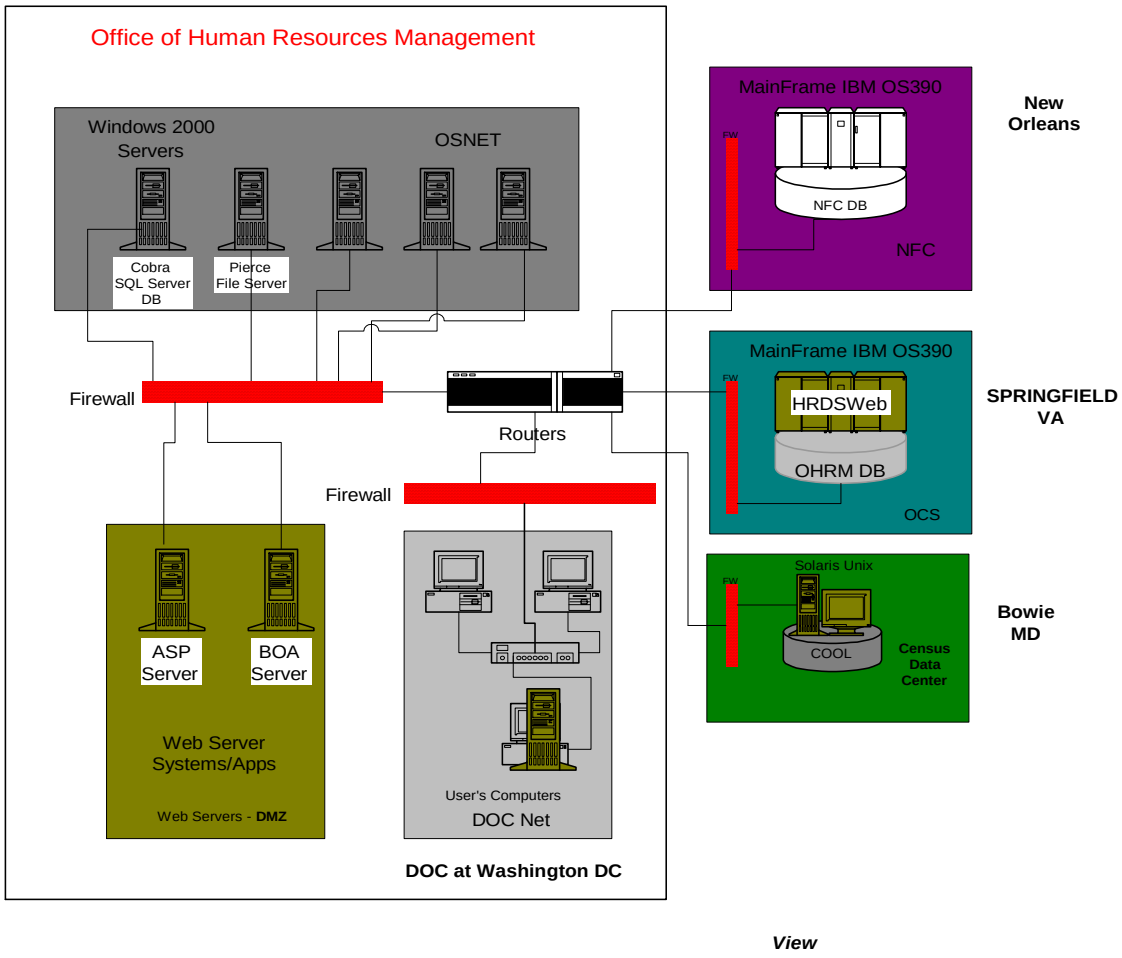


Figure 4 – OHRM Infrastructure

4.4.2. Financial Management

The Financial Management applications are hosted on UNIX servers as well as Windows 2003 based servers. The WEB-based applications are hosted on servers deploying the Apache Tomcat web server on a Windows 2000 platform. The CFS is based on an Oracle database and currently utilizes a client/server technology to deploy the end user interface.

There are a number of subsidiary and support systems, most based on Intel/Win2000 platforms, which provide messaging facilities including the interface to the CSTARS system, security, and CITRIX connectivity for users in NOAA and some other areas.

All of these systems are connected to the DOC Intranet and are accessible at all DOC locations within the USA.

4.4.3. Supply Chain Management

CSTARS is operated and managed in two locations. The Office of Computer Services (OCS), under the Chief Information Officer, hosts acquisition data for Census, OS+, and NOAA. OCS provides each bureau with their own environment that includes a separate instance of the CSTARS application and Oracle database. Although also using CSTARS, NIST operates and maintains a separate instance at their Gaithersburg, MD offices. While each bureau's data is currently stored in disparate databases, DoC is utilizing a data warehouse solution that provides for enterprise-wide reporting capabilities.

While CSTARS is currently implemented in a client/server environment, it does utilize Citrix Metaframe as an application server. Citrix provides increased system efficiency by shifting most of the processing from the local client to the application server. All application logic executes on the server and only screen updates (i.e. “screen images”), mouse movements and keystrokes are transmitted via Citrix. This reduces the amount of data transferred between the client and server, thus, alleviating potential network bandwidth issues.

Each of the Operating Units has captured their particular architectures and they are documented in the reference materials provided.

4.5 Security Architecture

The Department of Commerce (DOC) enterprise-wide method of protecting its assets in a cost effective manner is based on a security policy-driven architecture. The architecture incorporates a policy framework for identifying guiding security principles; authorizing their enforcements through a set of policies; and implementing the policies through technical standards, guidelines, and procedures. The policy framework provides a methodology that will permit the Department to implement security principles, policies, standards, guidelines, and procedures through a department-wide governance process.

The Department uses the Métis Modeling tool to model the security architecture, below is a screen shot of the DOC Security Governance that was captured from Métis.

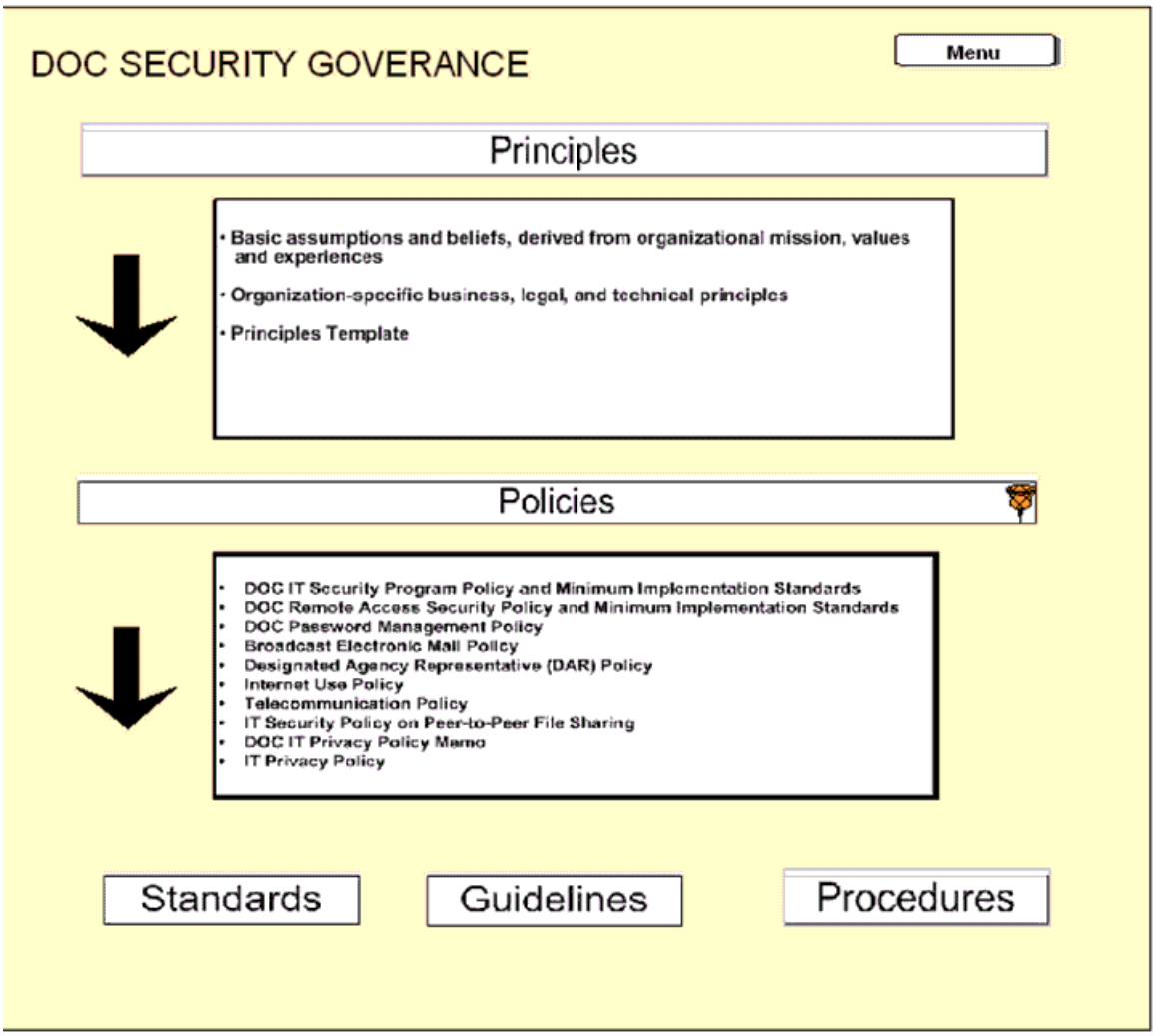


Figure 5 - DOC Security Governance

Principles are basic assumptions and beliefs, derived from an organizational mission, values, and experience. Security drivers create requirements that generate Architecture Principles that would be derived from the Strategic Planning Process. The National Oceanic and Atmospheric Administration (NOAA) has developed an effective and conclusive set a principles that can being used as a guideline to develop security principles for the different Operating Units through out the department. It is the responsibility of the Chief Architect from the various Operating Units to develop principles that are in accordance with their business community and also to insure that they align upwardly to the overall mission of the department.

Various security drivers such as compliance, threats, business needs, generate requirements that help define the policies that will be implemented in the DOC. The Federal Information Security Act (FISMA) is an example of a compliance driver that has created a requirement for the implementation of the DOC Security Program Policy and Minimum Implementation Standards. The DOC Security Program Policy and Minimum Implementation Standards specifies and explains the DOC Information Technology (IT) security program requirements and provides guidance on the implementation of IT Security Programs within DOC. All Operating units must have a documented IT Security Program Policy that conforms to the department's IT Security Program Policy and

Minimum Implementation Standards. The Minimum Implementation Standards are a set of security program controls to ensure that the policies are implemented effectively. The set consists of five management controls, nine operation controls, and three technical controls. The five management controls; security plans, review of security controls, authorize processing (C&A), risk management, and system life cycle management are required in the Certification and Accreditation of systems in the department. The other major security policies are DOC Remote Access and Security Policy, Broadcast Electronic Mail Policy, Designated Agency Representative (DAR) policy, Internet Use Policy, IT Privacy Policy, Telecommunications Policy, IT Security Policy on Peer-to-Peer File Sharing, DOC IT Privacy Policy Memo, and DOC Password Management Policy.

The DOC policy driven security architecture implements their policies through standards, guidelines and procedures that have been provided by National Institute of Standards and Technology (NIST). A few guides used in the DOC framework are NIST 800-18 Guide for Security Plans, NIST 800-30 Risk Management, NIST 800-37 Certification and Accreditation, and NIST 800-26 Self Assessment Guide. NIST 800-18 Guide for Security Plans implements the Security Program Policy and Minimum Implementation Standards by providing guidance to Operating Units in developing security plans that satisfy the department's approved certification package, which is called the System Security Plan Certification and Accreditation Package (SSPCAP). The Department uses the Métis Modeling tool to model the security architecture, below is a screen shot of the DOC IT Security Program Policy Management "AS IS" architecture.

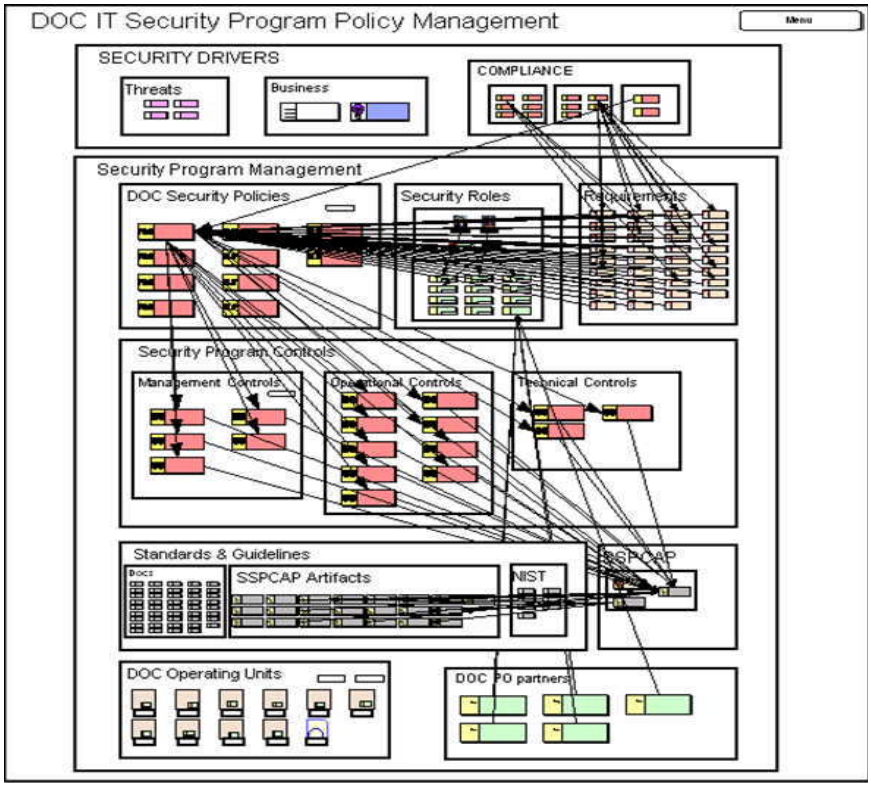


Figure 6 - Métis View of DOC IT Security Program Policy Management

5. Dept of Commerce Target Enterprise Architecture

Change drivers are external forces that act on the environment and necessitate adaptations to meet the new requirements for performing business functions. They are broken into two categories, Business drivers, and Technology drivers. These two forces work in a symbiotic way to enhance each other. Advances in technology provide means for providing more and better services to the customer, which drives business to improve itself over time. New markets and services require technology advances to implement them, catalyzing growth in the technologies available. For the purposes of an EITA, business drivers are preeminent, in that technology must be defined in the context of supporting business goals. Any changes to existing systems or addition of new systems must occur for the sole reason that a business case exists to justify the expenditures.

The target architecture is not a static goal, but a flexible framework. The target will change over time as business needs and technology change. It will provide a flexible framework to manage change to the best advantage of the DOC and its customers.

In the Federal government, the primary business drivers are public law (Congressional Acts), Presidential directives, Office of Management and Budget Circulars, and various other official pronouncements and policy statements from the Executive and Legislative branches of the government. There is also a desire within the Department of Commerce to help lead the way by example, both for other public agencies as well as for private industry. This means that new ways of conducting business and new products that are made possible by technological advances are major motivating forces within the DOC as well.

For a complete description of each Operating Unit's Target Enterprise Architecture, please refer to the individual Operating Unit's Enterprise Architecture listed in Appendix B, References.

Legislative and Policy Business Rules and Drivers

- **Information Technology Management Reform (Clinger-Cohen) Act of 1996** assigns the Chief Information Officers (CIO) the responsibility of developing, maintaining, and facilitating the implementation of a sound and integrated Enterprise Architecture. Defines the Enterprise Architecture as an integrated framework for evolving or maintaining the existing IT and acquiring new IT to achieve the agency's strategic goals and information resources management goals.

- **Government Paperwork Elimination Act of 1998 a**ll agencies must generally provide for the optional use and acceptance of electronic documents and signatures, and electronic record keeping where practicable, by October 2003.

- **Information Quality Act of 2000** act requires all agencies to establish guidelines to ensure the quality, objectivity, utility and integrity of information they disseminate. Specific guidelines from OMB required agencies to implement the Information Quality guidelines by October 2001.

- **E-Government Act of 2002** act establishes a Federal Chief Information Officer within the Office of Management and Budget to enhance the management and promotion of electronic Government services and processes, and to establish a broad framework of measures that require using Internet-based information technology to enhance citizen access to Government information and services, and for other purposes. Additionally, it requires a privacy impact assessment and defines the guidelines for performing it. The act require that a privacy impact assessment address:
  - What information is to be collected
  - Why the information is being collected
  - The intended use of the agency of the information
  - With whom the information will be shared
  - What notice or opportunities for consent would be provided to individuals regarding what information is collected and how that information is shared
  - How the information will be secured
  - Whether a system of records is being created under section 552a of title 5, United States Code, (commonly referred to as the `Privacy Act')

- **Federal Information Security Management Act of 2002** (Title III of the E-Government Act of 2002) provides a comprehensive framework for ensuring the effectiveness of information security controls over information resources that support Federal operations and assets.

- **Government Performance and Results Act of 1993** mandates development and maintenance of strategic plans and performance measures. Any new IT initiative required to meet the target architecture must include performance measures that focus on results.

- **Paperwork Reduction Act of 1995** requires agencies to become more responsible and publicly accountable for reducing the burden of Federal paperwork on the public. New initiatives are mandated to consider automated and electronic IT solutions to existing manual and paper based products for public access.

- **President's Management Agenda** is the President's vision for government reform is guided by three principles that the Government should be:
  - Citizen-centered, not bureaucracy-centered
  - Results-oriented
  - Market-based, actively promoting rather than stifling innovation through competition.

  The Agenda contains five government-wide and nine agency-specific goals to improve federal management and deliver results that matter to the American people. It reflects the Administration's commitment to achieve immediate, concrete, and measurable results in the near term. It focuses on remedies to problems generally agreed to be serious, and commits to implement them fully. The goals in this Agenda are being undertaken *in advance of, not instead of* other needed management improvements. Additional goals will be undertaken, as tangible improvements are made in this initial set of initiatives.

The five government-wide goals are mutually reinforcing. For example,

- Workforce planning and restructuring undertaken as part of Strategic Management of Human Capital will be defined in terms of each agency 's mission, goals, and objectives —a key element of Budget and Performance Integration.
- Agency restructuring is expected to incorporate organizational and staffing changes resulting from Competitive Sourcing and Expanded E-government.
- Likewise, efforts toward Budget and Performance Integration will reflect improved program performance and savings achieved from Competitive Sourcing and will benefit from financial and cost accounting and information systems which are part of efforts in Improved Financial Management.

- **OMB Federal Enterprise Architecture (FEA)** is a new project OMB has initiated with the participation of all of the Departments and independent agencies within the Administrative Branch. It begins by classifying all activities of the Federal Government in the Business Reference Model (BRM). From that vantage point, it develops performance goals in the Performance Reference Model (PRM). The last three components of the FEA are the Data Reference Model (DRM), Service Component Reference Model (SRM) and the Technical Reference Model (TRM), each of which describes how the lines of business in the BRM are implemented at the technical level. The overall purpose of the FEA is to define a common framework across all Departments and agencies, as well as state and local governments and private industry partners, for integrating systems, enhancing the ability to share data, and to find and eliminate duplicative efforts.

  A significant change from the current process is that the FEA looks at lines of business, regardless of where or by whom they are performed. It is a cross-cutting approach aimed at breaking down traditional stovepipes and streamlining the conduct of business with the Federal Government.

- **Office of Management and Budget E-Gov Initiatives** a direct outgrowth of implementing the PMA, OMB has instituted 25 E-Gov initiatives as well as an additional 5 Line of Business initiatives to begin implementing the PMA. These initiatives are designed to coordinate lines of business across agency boundaries and provide an integrated, one stop approach for the end-user to conduct business with the Federal Government. The five LOB initiatives are aimed at streamlining the way in which agencies manage their resources. It is an attempt to standardize the activities common across all agencies such as financial management, payroll, human resources, procurement, and grant management and streamline the administration of these activities as well as reduce the cost to the tax payer.

- **Office of Management and Budget Circular No. A-130 of 2000** directive highlights the importance of evaluation and performance measurement. It recommends that agencies seek opportunities to improve the effectiveness and efficiency of government programs through work process redesign and the judicious application of information technology. It also recommends agencies perform cost benefit analyses to support ongoing management oversight processes. Agencies should also conduct post-implementation reviews of information systems to validate estimated benefits and document effective management.

- **Office of Management and Budget Circular No. A-11** document provides detailed instructions on the preparation of budget estimates. New IT initiatives required to support the target architecture must be included in future budget estimates.

- **Office of Management and Budget Bulletin No. 96-02 of 1995** bulletin provides guidance for significantly reducing the number of agency data centers and reducing the total cost of data center operations within government. This planning must be part of developing the overall Enterprise Architecture.

Each of these drivers influences how the DOC will conduct its business in the future and each has an effect on developing the target architecture to perform the business functions. A summation of these business drivers includes using automated means to the maximum extent possible, supported by a solid business case analysis for deploying these systems. Each system will have performance metrics defined and evaluated on a continual basis to certify that the system is performing up to the requirement of the user community, at a cost that is appropriate for the function. Further, system development must be tied to business needs, and should reuse as much as possible from other existing systems to minimize cost and development time.

Technology Drivers

The pace of technological change moves much faster than the ability of most organizations to keep pace. Many find themselves significantly behind the power curve in many areas of the enterprise. This gap between the current technology level and the leading edge are where the driving forces for changes in technology are found.

Rapid advances in the following areas dominate the current technology environment:

- **Telecommunications advances**
  Rapid increase in bandwidth and transmission speed has fueled the growth of multimedia applications, including video conferencing and distance learning. As the implementation of broadband and wireless technologies increases, the performance of these types of applications will accelerate. Additionally, the increased performance and capacity is leading to a fusion of voice, data, and video over one network. This will allow the integration of many common office functions such as voice mail, fax, and video conferencing into the standard user desktop. The increased bandwidth and capacity will also allow users to perform tasks more easily from remote locations, allowing widespread use of telecommuting.

- **Internet & Intranet**
  Development of private, secure Internet sites for organizations (called Intranets) has provided a catalyst for deploying enterprise-wide applications to users via an internal Web site. The Intranet is protected from, but connected to, the Internet. Firewalls and sophisticated means of user authentication allow business functions to be performed using standard browsers, from any location. The Internet growth also has catalyzed change. Information and services traditionally supplied to customers through paper-based systems are now accessible to a broader group of customers through the Internet, and can reduce delivery time from days to minutes providing better customer service and satisfaction.

- **Electronic commerce**

E-commerce is the buying and selling of goods and services on the Internet, especially the World Wide Web. In the government, E-commerce provides the means for obtaining licenses, applying for permits, registering for services, submitting forms, and obtaining information. In conjunction with security mechanisms for authentication, it provides a means for the public to conduct much of the routine business with the government via the Internet. This will reduce costs, expedite processing, and improve customer satisfaction and service.

- **Integrated workflow**
  Workflow is the orderly movement of a process from one step to the next. It defines each step in a task, the order in which they must be done, and the endpoint of the task. Integrated workflow allows this information to become part of the system, automatically routing work to the appropriate user or office for completion. The development of a digital workflow allows the entire process to be carried out without any paper being involved. It provides routing information, signature and authorization requirements, plus progress tracking and exception handling. Integrated workflow provides the linkage required to automate repetitive tasks, and can be applied to each of the areas addressed by this document.

- **Public Key Infrastructures/Digital Signature Certificates**
  Computer security has been a major industry concern since networking began. It is very simple to manipulate any type of data, including audio and video, with the sophisticated tools and processors available. E-commerce initiatives were the catalyst for the needs to substantiate data as being reliable and authentic and to undeniably acknowledge receipt of the information by the intended recipient (i.e., non-repudiation).

  As a response to these issues of privacy and information security, public key infrastructures have emerged. It is a means of encoding a message that can only be decoded by a user who has the correct decoding key. This allows data and information to be transmitted securely over unsecured public networks without fear of disclosure to, or use by, unauthorized parties.

  Digital signatures are a means of electronically signing a document whereby the authenticity of the signature can be verified, but the signature itself cannot be copied. Additionally, it provides a mechanism for determining if the document has been altered in any way after the signature was applied. This allows secure and confidential applications to be deployed that eliminate the need for pen and ink signatures on paper. Together, digital signatures and public key infrastructures allow E-commerce to operate with a high measure of security, privacy, authenticity, and non-repudiation.

- **Remote/Mobile Computing**
  As little as 10 years ago, most computer related tasks had to be performed from devices (PC, dumb terminals) that were physically connected to the local network. This restriction is under continuous assault as wireless communications devices grow in sophistication and reliability. It is now possible to access a corporate intranet from a small cellular telephone and conduct many standard business functions. It is also possible to connect via cellular modem from a standard laptop computer and have full access to the desktop as if the user was sitting in the office.

  This type of access has significant implications for a workforce geographically distributed all over the world, often in the field away from PCs and other more traditional entry points to the

Internet/Intranet. It means that users can stay connected regardless of location, and can interact with other users and organizations in real time from the field as well as in the office. Special application designs are required for many portable devices now, but this will also change as the technology standardizes over time. An additional issue surrounding wireless devices is security. Wireless transmissions can be intercepted, necessitating a more rigorous approach to security for remote devices. Access to these devices and to the DOC network must be designed to prevent security from being compromised while allowing for the full flexibility this technology offers.

- **Digital Publishing**
  Most documents and reports produced in the last few years are available on the Internet. Older documents are also available in many cases, with one distinct difference. New documents are written with Web publishing in mind and make use of appropriate tools such as HTML or PDF file formats. Older documents are in paper format and must be scanned from paper (or microfiche) and converted to one of these formats using optical character recognition (OCR) tools to convert the image to actual text. Documents explicitly published for the Web are searchable, much smaller, and easily made available. Scanning and OCR are expensive operations, requiring labor intensive effort to make documents available on the Web. One of the largest functions of government web sites is making information available to anyone. The use of digital publishing tools will facilitate this process, and make more information available to a wider audience for less cost.

- **Platform Independence**
  Platform independence is the ability to separate applications from the underlying operating system (OS) and hardware. In its idealized form, it means that an application could be moved from one OS/hardware platform to a different one with no reengineering of the code. Although not possible now, the trend is moving in that direction. User interfaces employing standard Web browsers have already achieved this in that any HTML/Java compliant browser can access the applications with no changes between platforms. The users do not need to be concerned using Windows, UNIX, or Macintosh systems; the applications supported by the browsers are accessible from any of these. Applications written using standards compliant compilers or using more recent development tools such as Java and XML have achieved a high level of independence though not complete. The importance of platform independence is that it allows IT managers to make hardware procurement decisions based on the best value for the dollar in the market at the point in time the purchase is made. It does not restrict the choices to only platforms capable of supporting a particular application or system.

In addition to these areas, IT Security has become a primary concern and major force in decision-making. With advances in Internet technology and its integration down to the desktop, a profusion of vulnerabilities have been found and continue to be found. Many of these vulnerabilities are exploited by malicious individuals or groups for a variety of reasons, and with varying levels of effect. The cost to defend against these attacks has risen steadily, and will continue to do so for the foreseeable future. Combating these attacks, proactively fixing defenses, integrating security into all levels of the IT environment, and educating end-users is paramount to the sustainability of electronic government and the existence of the Internet itself.

Privacy has also become a large issue with the expansion of electronic government. Users must be assured that information they provide is safe, and will be used in a lawful manner. Disclosure of what information is kept and its disposition is a significant concern and must be fully addressed for all government services. Privacy policies are required for all Web sites and must be readily available to the user before initiating any transactions.

5.1 Business Architecture

The target architecture describes the future state of the Enterprise based on business needs and goals, as well as technological evolution. It is the goal DOC strives to achieve over time. The Target architecture is not cast in stone, but rather a living framework. Enterprise Architectures must be flexible, realizing that business realities and technology drivers change the specifics of the goal over time. This section describes the overarching departmental functions and the business architecture of the operating units

5.1.1 Enterprise Business Functions

The federated approach to the architecture is shown in the picture below (Figure 7). The systems and services that cross operational boundaries will be coordinated across the DOC, those function that are mission specific to the operating unit will be defined at that level.

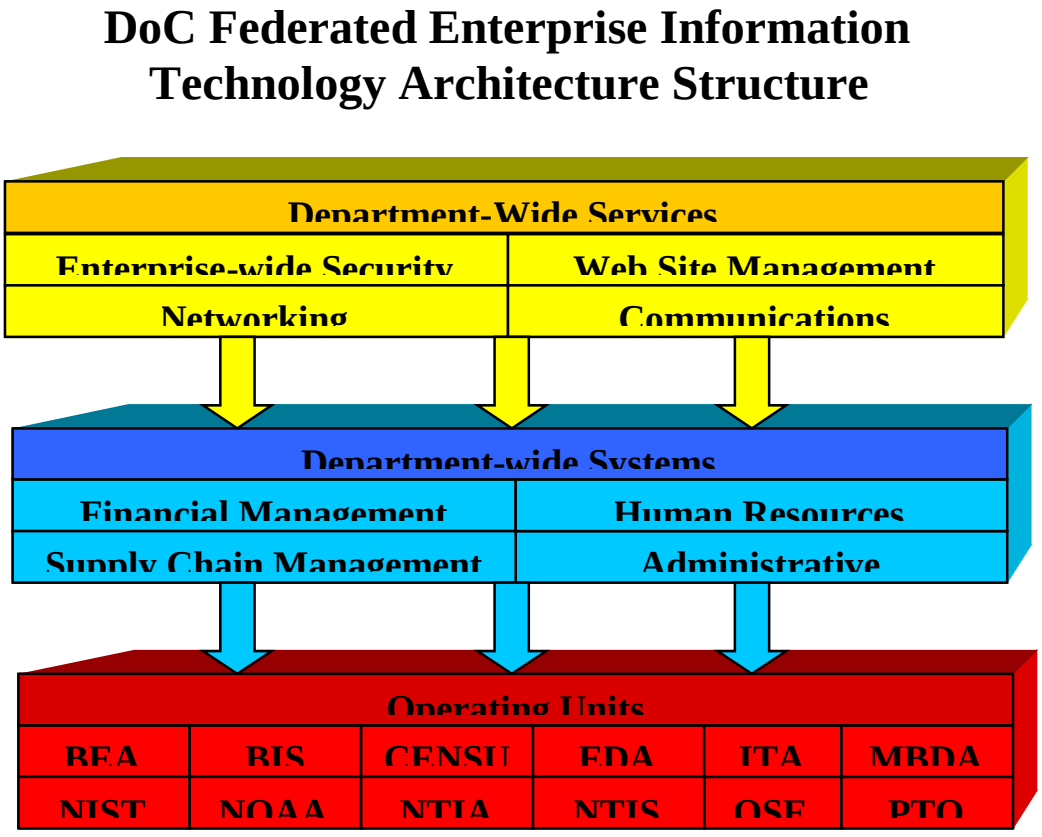


Figure 7 DOC Federated Enterprise Information Technology Architecture Structure

The target architecture for the DOC covers the following architecture segments:

- Enterprise-wide Security & Privacy
- Web Site Management
- Communications
- Administrative Management
- Grants Management

Each of these segments is common to many or all operating units in the DOC. For this reason these areas provide the necessary scale to make an Enterprise-wide approach feasible **and** cost-effective. Additionally, these segments are not mission specific in nature, but rather provide the underlying foundation for the deployment and operation of all IT assets, products and services.

5.1.1.2 Enterprise Wide Security and Privacy Segment

Security covers a lot of territory, and becomes a more critical component of the architecture as new technologies are deployed and methods of attack are discovered. It is essential to the life of the organization to maintain as high a level of security and privacy as warranted, based on the perceived risks. Security addresses the management, operational, and technical preventative measures, including data security and the use of encryption and other techniques to safeguard data transmissions.

The full list of areas covered is:

- Management Controls
- Risk Management
- Review of Security Controls
- System Life Cycle
- Authorize Processing
- System Security Plans
- Operational Controls
- Personnel & Physical Security
- Production, Input/Output Controls
- Contingency Planning
- Hardware/Software Maintenance
- Data Integrity
- Documentation
- Security Awareness, Training
- Incident Response Capabilities Technical Controls
- Identification and Authentication
- Logical Access Controls
- Audit Trails

Each of these areas address specific aspects of maintaining security and the privacy of the information contained in all DOC systems. Together they form a complete framework for securing the DOC Enterprise from attacks from any source. Each of these areas must be fully addressed for each system within DOC, and certification obtained prior to any new systems becoming operational.

5.1.1.2. Web-Site Management Segment

The Office of the Secretary is implementing a Content Management System (CMS) with the objective of bringing OS websites into compliance with applicable laws, regulations, and policies; reducing resources required for maintaining current websites; and increasing security of the websites.

The use of the CMS provides the following benefits:

- Helps enforce compliance with laws, regulations and policies
- Reduced need for content owners to understand web technologies and HTML
- Less time spent on formatting of content for publication
- Consistent website style/design (for a corporate look/feel)
- Minimized risk of servers being compromised
- Information easier to find by website users
- Managers may actively manage content by approving only correct and appropriate material
- Obsolete content is automatically removed after expiration date
- An enterprise-wide solution enables cross-office training and support
- Allows for retrieval of content from a previous date
- Design changes easily accomplished because of separation of content from design
- Website updates may be possible from outside HCHB (valuable for COOP, travel and teleworking)

Use of a Content Management System supports O/S mission and goals. Information quality will be enhanced and we will be better positioned to increase web-enabled processing through our Intranet.

Currently, a pilot implementation is underway in OHRM, as well as in the Office of the Chief Information Officer. Upon successful completion of the pilot, Stellant (the COTS package selected), will be deployed to the rest of OS.

5.1.1.3. Communications Segment

Communications services provide the capability to send receive, forward, and manage electronic and voice messages. They also provide real-time information exchange services in support of Security.

As part of the initiative to support Homeland Security Presidential Directive 12 (HSPD-12), DOC is actively investigating the best way to deploy Directory Services, which will provide a repository for the PKI infrastructure needed to fully implement HSPD-12. In addition to this function, the Directory Services will be utilized to determine system access rights for all users, allow for Digital Signatures where appropriate, and serve as a base for deploying more Web-enabled applications throughout the DOC.

Emergency Notification System

The Office of the Secretary recognized the need to improve Commerce's ability to perform its mission during emergency situations and to ensure the safety and well being of our employees. The

Office of Human Resources Management (OHRM) has taken the lead to develop and implement a Department-wide Emergency Notification and Accountability System (ENS) that will notify employees using several methods (phone, email, etc.), in a timely manner; and collect information on the status of employees and their availability to work. The system is being designed to provide two way communication with employees during emergencies; reporting capabilities on information collected; scalability for system expansion; reliability through redundancy; and to ensure employees have access to information about the emergency situation.

A pilot for the Herbert C. Hoover Building will be completed by the end of the second quarter FY 2005. A strategy for department-wide deployment will be developed at the end of the pilot and begin in the third quarter FY 2005.

5.1.1.4. Administrative Management Segment

The Commerce Administrative Management business model was designed with the goal of providing common administrative services throughout the DOC. The core piece of this design is the financial accounting and management function. Since most other administrative functions must interface with the financial management tasks, the design provides the linkage between these functions and establishes a priority of where various tasks should originate.

As an outgrowth of linking these functions and the systems that support them, information important to decision makers will be more readily available and will facilitate the planning, budgeting and forecasting tasks associated with managing the DOC.

The administrative functions are grouped into several categories:

- Financial Management
- Procurement
- Property Management
- Human Resources

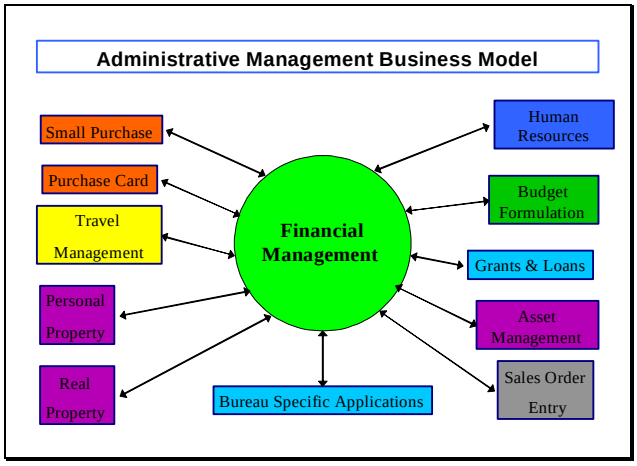


Figure 8 - Administrative Systems Business Model

Several important Finance-related future architectural projects that will help the CSC and Commerce meet the Expanded Electronic Government goal are currently underway. They are briefly described below.

Web–Enabled Finance Application Architecture
The CSC and Commerce bureaus are currently completing a feasibility study for the migration of the CBS applications from client/server to a Web-based architecture. It will form the basis of the presentation layer improvements within the target architecture, and will form the basis of ongoing operations at the bureau through the FY 2012 timeframe.

E-Travel
GSA has required that all federal government agencies must use one of three authorized vendors for all travel support operations. This includes creating travel orders, making travel arrangements, and processing travel vouchers. As a consequence of this requirement, travel transactions related to the DoC financial operations will be captured in a third party software package and passed or loaded into the existing DoC financial systems.

In order to support this new requirement, the DoC Target Architecture will incorporate an interface between itself and the E-Travel Service Provider selected to provide travel services to DoC. This interface will accommodate the needs of three different accounting systems operating in a total of five different locations within the DoC. The interface will manage all E-Travel Transactions between the E-Travel Service Provider and all of the organizations and systems involving Financial System operations and payment processing within the DoC.

5.1.1.5. Grants Management Segment

There are many operating units within DOC that administer grants programs. Most if not all are participating or will participate in the e-Grants project, which provides a single user interface for all grant programs throughout the Federal Government. After analyzing the various grant processing (back end) systems in DOC it was determined that this could also be consolidated. The goal is to migrate all backend grant processing to a generalized system that will provide capability for all requirements of the various grant programs across DOC.

5.1.2 Supply Chain Management

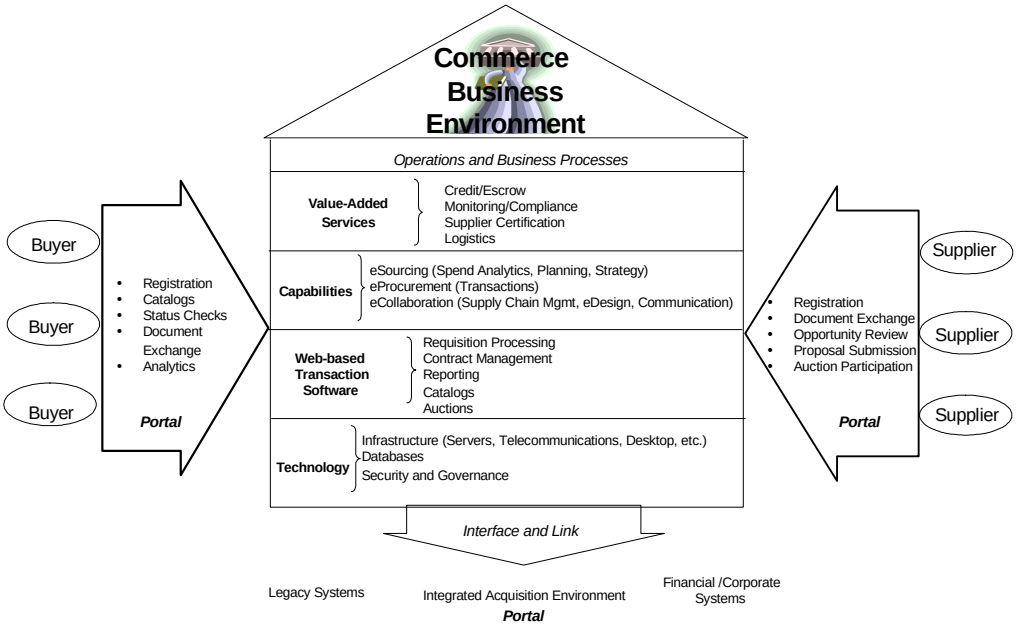
OAMFA seeks to modernize their current acquisition systems and business processes while ensuring compliance with all Federal legislation and mandates. This vision is based on the outline that was described in the Statement of Objective, E-Vision document developed by the Office of the Secretary and the Office of Acquisition Management along with several discussions and meetings that were held with the Commerce Acquisition Systems Division (CASD) management team. The following objectives for an automated acquisition environment have been defined:

- Web-based, one-stop-shop: will provide a web-based central point for all users, vendors and contractors to communicate with the Department
- Secure: meets all Federal and agency-wide security policies specifically the DoC Office of IT Policy and Planning guidelines
- One acquisition system to handle all end-to-end lifecycle activities: streamlines and standardizes business processes and all acquisition activities by utilizing a modernized, integrated system
- Based on Commercial, Off-the-Shelf (COTS) products: mature, best of breed products provide a solution that is based on best practices

- Integrated with financial systems: provides accurate vendor and account code data, real time financial commitments and obligations along with improved payment processing (including reconciliation, receipts, invoicing and payment data)
- Consolidated acquisition data: provide improved reporting capabilities by centralizing data repositories
- Compliant with all federal legislation and mandates: meets all legislative requirements while leveraging existing e-Gov resources
- Improve performance and increase efficiencies: improvements in the quality or timeliness of acquisition processing

In order to meet these objectives, DoC envisions a Commerce Business Environment that will streamline its operations and business processes. DoC vision includes the key acquisition functionality and information flows sought by the Department, see figure 9.

Figure 9 – Commerce Business Environment



Acquisition End-to-End Lifecycle Functionality

The acquisition functionality for the DoC vision should support all acquisition management functions and processes across the entire enterprise, with the exception of PTO, in a single acquisition "portal-like" solution that serves the acquisition stakeholder community. These functions exist throughout four phases within the acquisition lifecycle: strategy, source, procure and settle, and manage and collaborate. The following is a list that provides a description of each desired function according to its location within the acquisition lifecycle:

Strategy

- Spend and Supplier Analytics - Advanced reporting on spend, commodities, projects and contracts; analyzing supplier performance.

Source

- Market Research - Research conducted relating to a particular product market or service
- Forward Auction - A trading model whereby a seller offers items to many buyers, and typically the highest bidder wins the deal. Companies will regularly use an online forward auction to sell slow moving, excess or obsolete inventory items, and assets, distressed or returned merchandise.
- Reverse Auction - A trading model whereby a buyer invites many suppliers to bid and, typically, a seller's lowest bid wins the deal. Often, procurement professionals who need to source goods or services that are not covered by existing contracts or when contracts need to be negotiated or renegotiated will perform a reverse auction.

Procure and Settle

- Requisition - A formal written request for something needed, typically a product or service
- Inventory Check - Request to see if a product is in stock and available
- Solicitation - A formal petition or request for something desired, typically for a product or service (i.e. RFQ or RFP)
- eProcurement - The electronic ordering or purchasing of products and services
- Vendor Award/Contract Generation - The process of selecting a proposal offered by a vendor for a product or service and creating a contract (service) or purchase order (product)
- eCatalog Management - The listing of available products or services that an organization/vendor offers
- Payment Applications - Systems used for the electronic payment, receipt, reconciliation and invoicing of products or services
- Credit/Escrow - A positive balance or amount remaining in a buyer's account
- Logistics - Identifying the status a shipment or delivery

Manage and Collaborate

- Contract Management - The management and overall operational control over an organization's contracts and related business processes
- eCollaboration - Allows people across the Enterprise Web to work together on projects / initiatives—setting schedules, assigning tasks, sharing documents and exchanging idea. Typically includes document management, threaded conversation, calendar and task management components
- Monitoring and Compliance - The act of according to certain government accepted standards and mandates
- Reporting - Includes all canned and ad hoc reporting via a data warehouse

Core and Extended Functionality

The acquisition functionality for the DoC vision can be further broken down into two categories: core and extended. Figure 10 depicts both sets of functionality along with the most critical components of each. Core functionality includes most basic acquisition activities such as requisition processing, financial data interfacing, solicitation, processing, contract management, and reporting, in a limited portal-like environment, focused on content management and presentation. Extended functionality addresses new eMarketplace technologies and concepts such as reverse and forward auctions, eCatalogs, and electronic solicitations and responses and includes a more robust portal environment including messaging, file management, etc.

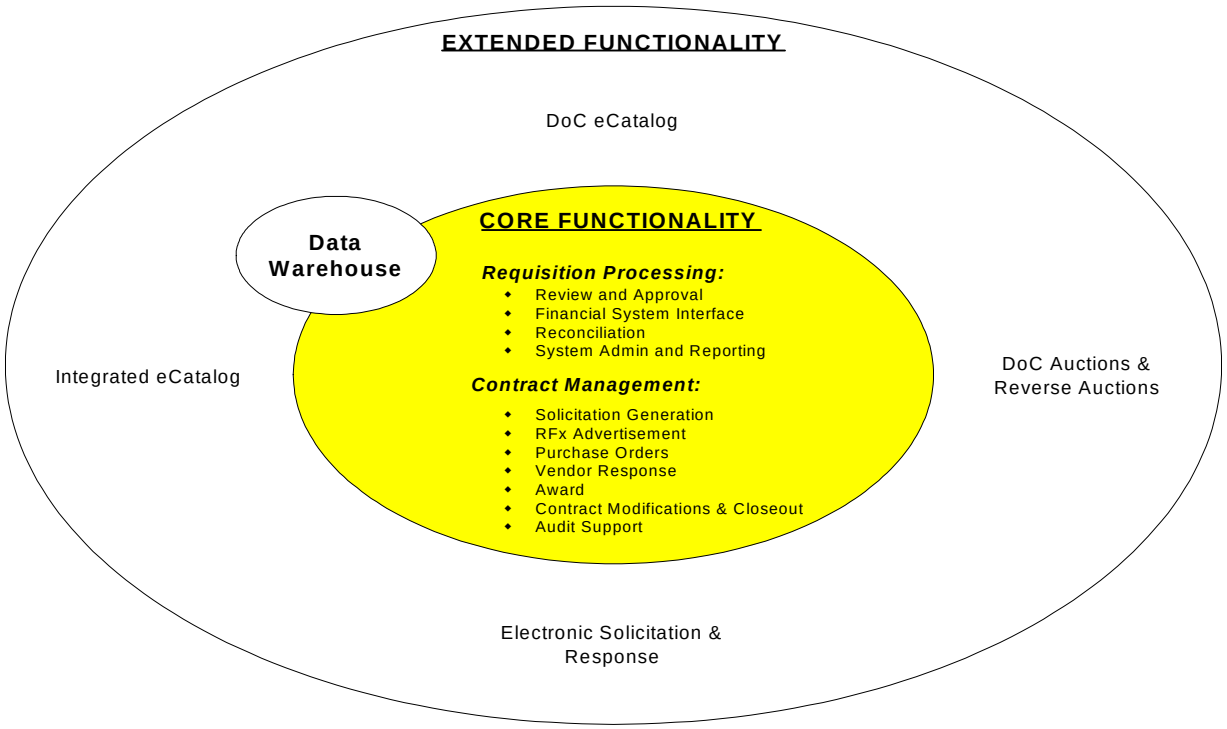


Figure 10 – Core and Extended Acquisition Functionality

Core functionality provides the basic acquisition functionality and is segmented into two groups: Requisition Processing and Contract Management. Requisition Processing addresses basic requisition and simplified acquisition processes. Functionality that is provided includes:

- Requisition review and approvals
- Interface with the financial systems
- Reconciliation
- System administration and reporting
- Leverage Federal-wide acquisition initiatives such as IAE

Contract management addresses the management and overall operational control over an organization's contracts and associated business processes. This includes:

- Solicitation generation
- RFx advertisement along with integration with DoC's Business Opportunities Page (BOP) and FedBizOpps
- Purchase Order processing
- Acceptance of vendor responses
- Award generation
- Contract modifications and closeout

Extended functionality provides DoC with more advanced, eMarketplace capabilities that they do not have the ability to perform today. These include:

- DoC eCatalog
- Integrated eCatalog
- DoC auctions and reverse auctions
- Electronic solicitation an response

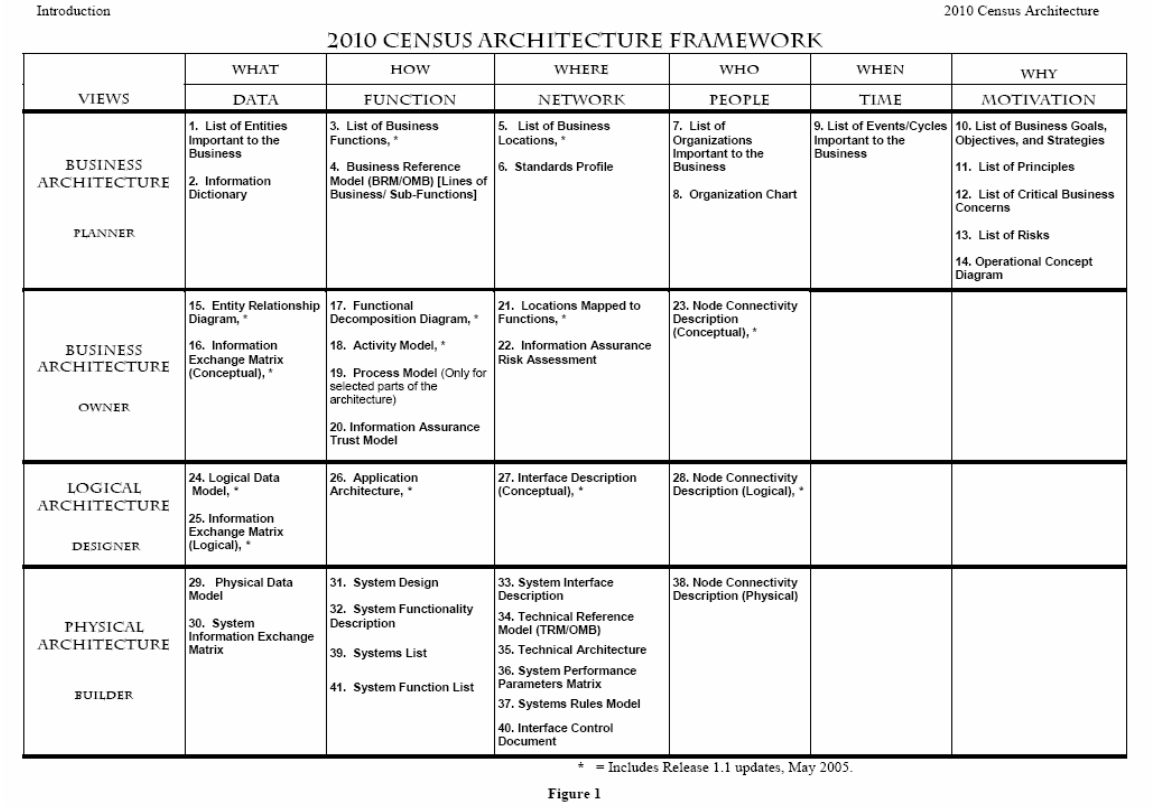
5.1.3 Census Bureau

Objective 1.5 of the Census Bureau Strategic Plan is to "meet the information needs of other agencies and countries by collecting data for them and providing technical assistance services." Strategies to achieve the objective include:

- Implement and evaluate a new policy for accepting reimbursable work
- Carry out reimbursable tasks in ways that provide accurate, timely, relevant, cost-effective, and accessible products for customers
- Share knowledge with the international community. Provide advice and assistance to international organizations, public and private, in designing, collecting, and disseminating statistics

The scope of the 2010 CA consists of those activities performed specifically to accomplish the 2010 Census within the Bureau of the Census and the data required by those activities. This document summarizes the accomplishments of Phase III of the 2010 Census Architecture development. It is important to recognize that the business activities for the 2010 Census are evolving as research and development and testing programs are conducted. Accordingly, the architecture follows the 2010 Census Baseline, and will need to be updated as final process decisions are made.

The 2010 CA Framework, illustrated in Figure 11, is a matrix in which the columns are types of information that describe the enterprise such as: data, function, network, people, etc. and the rows are views of this information from the perspective of different types of users such as: planners, owners, designers, builders, etc. Products frequently build upon the products in the preceding rows. For example, the Entity Relationship Diagram in the Owner row is expanded and further detailed in the Logical Data Model in the Designer row.



Introduction 2010 Census Architecture

2010 CENSUS ARCHITECTURE FRAMEWORK

VIEWS	WHAT DATA	HOW FUNCTION	WHERE NETWORK	WHO PEOPLE	WHEN TIME	WHY MOTIVATION
BUSINESS ARCHITECTURE PLANNER	1. List of Entities Important to the Business 2. Information Dictionary	3. List of Business Functions, * 4. Business Reference Model (BRM/OMB) [Lines of Business/ Sub-Functions]	5. List of Business Locations, * 6. Standards Profile	7. List of Organizations Important to the Business 8. Organization Chart	9. List of Events/Cycles Important to the Business	10. List of Business Goals, Objectives, and Strategies 11. List of Principles 12. List of Critical Business Concerns 13. List of Risks 14. Operational Concept Diagram
BUSINESS ARCHITECTURE OWNER	15. Entity Relationship Diagram, * 16. Information Exchange Matrix (Conceptual), *	17. Functional Decomposition Diagram, * 18. Activity Model, * 19. Process Model (Only for selected parts of the architecture) 20. Information Assurance Trust Model	21. Locations Mapped to Functions, * 22. Information Assurance Risk Assessment	23. Node Connectivity Description (Conceptual), *		
LOGICAL ARCHITECTURE DESIGNER	24. Logical Data Model, * 25. Information Exchange Matrix (Logical), *	26. Application Architecture, *	27. Interface Description (Conceptual), *	28. Node Connectivity Description (Logical), *		
PHYSICAL ARCHITECTURE BUILDER	29. Physical Data Model 30. System Information Exchange Matrix	31. System Design 32. System Functionality Description 39. Systems List 41. System Function List	33. System Interface Description 34. Technical Reference Model (TRM/OMB) 35. Technical Architecture 36. System Performance Parameters Matrix 37. Systems Rules Model 40. Interface Control Document	38. Node Connectivity Description (Physical)		

* = Includes Release 1.1 updates, May 2005.

Figure 1

Figure 11 – 2010 Census Architecture Framework

The first phase of the 2010 CA addressed the Business Architecture in the Planner and Owner rows. The second phase addressed the Logical Architecture in the Designer row, and also included further development of several Business Architecture products. The third phase focused on creating a more functional Activity Model, and as a result, the Logical Architecture and few related Business Architecture work product descriptions were updated.

As 2010 Census design decisions are made, the Logical Architecture will be maintained and may be further developed to support 2010 Census decisions. The Logical Architecture will also be advanced and require iterative updates as it is utilized to support and guide the development of the Physical Architecture and systems to support the 2010 Census.

This framework contains those products that will be useful to the 2010 Census and those that meet OMB requirements. Figure 12 depicts a mapping of basic OMB requirements and the products in the Business and Logical Architecture portions of the 2010 CA Framework.

Work Products that Help Satisfy Office of Management and Budget (OMB) Circular A-130 Reporting Requirements

OMB Circular A-130 Reporting Requirements	*Corresponding 2010 Census Architecture Products*		
Business Process	✓ Activity Model ✓ Operational Concept Diagram	✓ Functional Decomposition Diagram & Outline	✓ List of Business Functions
Information Flows & Relationships	✓ Activity Model ✓ Node Connectivity Description	✓ Information Exchange Matrix ✓ Application Architecture	
Applications [1]	(Applications, i.e., systems, will be included in the 2010 Census Physical Architecture)		
Data Descriptions & Relationships	✓ Logical Data Model		
Technology Infrastructure	(Technology will be included in the 2010 Census Physical Architecture)		
Technical Reference Model	(Technology will be included in the 2010 Census Physical Architecture)		
Standards Profile (including security standards)	✓ Standards Profile		
Information Assurance	✓ Information Exchange Matrix	Information Assurance Trust Model[2]	Information Assurance Risk Assessment[2]

Notes:
✓ = Framework product is completed
[1] = OMB applications are systems such as software applications, not the application areas
[2] = In Progress

Figure 12 – OMB Mapping to 2010 Census Architecture Products

5.1.3 ITA

Five new Lines of Business have been defined for ITA:

- Define and Develop Policy
- Strengthen U.S. Industry
- Promote Trade and Investment
- Ensure Fair Trade and Compliance, and an enabling process
- Plan and Manage ITA

Several cross-cutting competencies have been identified. These span all five LOB's and have implications for the transition of the ITA and the training of its personnel. They are:

- Customer Satisfaction and Performance Management
- Communications
- Information Technology and Tools
- Analyze Information and Set Strategic Priorities
- Conduct Outreach and Client Development

The following diagram illustrates the highest-level process architecture and flow for ITA. ITA's products and services are produced and delivered to customers through the interaction of these processes.

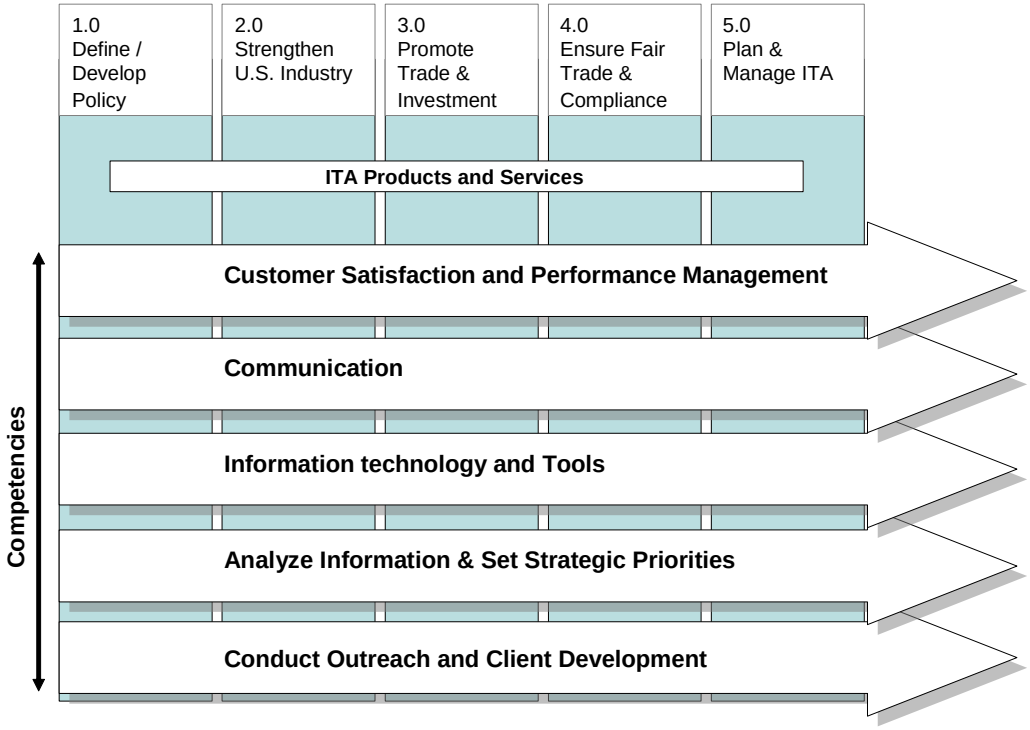


Figure 13 - Target LOB's and Competencies

Following table shows ITA Lines of Business (LOB) and ITA organization that has primary responsibility for the LOB.

ITA Organizations / Line of Business (LOB)		1.0 Define and Develop Policy	2.0 Strengthen U.S. Industry	3.0 Promote Trade and Investments	4.0 Ensure Fair Trade and Compliance	5.0 Plan and Manage ITA
US and Foreign Commercial Service (USFCS)				x		
Import Administration (IA)					x	
Market Access and Compliance (MAC)		x			x	
Manufacturing and Services (MAS)		x	x			
Executive Administration (Ex-Admin)		x				x

Table 9 - TA LOB's Map to Organization

5.1.4 MBDA

The Office of Business Development is developing new strategy to make it more customer-oriented. The strategy is to pull resources from different MBDA offices and Business Development Specialists to meet the client needs and make deals.

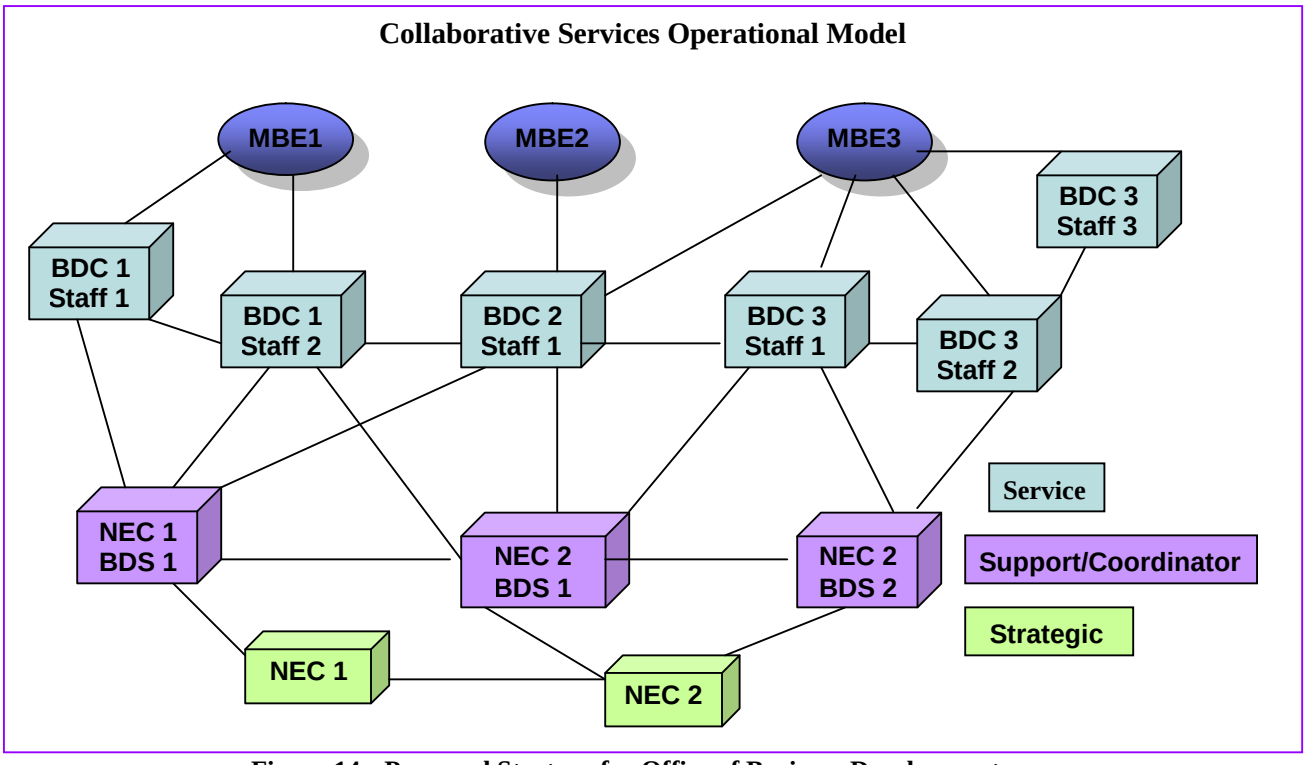


Figure 14 - Proposed Strategy for Office of Business Development

5.1.5 NOAA

A summary of NOAA's Target Architecture are described in the following paragraphs.

Ecosystems

Provide Critical Information for Water Resources

NOAA operational service delivery infrastructure must be better integrated and leveraged with other federal water agency activities to form the basis of a national backbone water information system. NOAA must acquire, assimilate, and manage water quality monitoring data and deliver an innovative suite of timely, valuable products for water managers and the public. This enhanced capability to monitor, analyze, and predict water quantity and quality will allow us to predict water conditions for the oceans, Great Lakes, coasts, and contributing watersheds. It will also allow us to assess the related ecosystem impacts on living marine resources, human activities, and regional economies.

Provide Leadership for the Oceans

By 2011, NOAA should be able to forecast routinely the extent and impact of critical ecosystem events, such as harmful algal blooms, and the effects of human activities, such as those of noise on protected species. Through our observing efforts, NOAA anticipates increasing by 25% the number of protected, at-risk, and major commercial species stocks that we assess, while continuing our lead role in monitoring, management, and conservation of known populations and protected areas. NOAA envision using NOAA information and services for the development of active regional forums that establish national capabilities for fostering improved ecological sustainability, and that maintain balance among competing uses of coastal, marine, and Great Lakes ecosystems. To meet these challenges, NOAA must be at the forefront in developing and implementing an ecosystems approach to management that is geographically specific, incorporates science, involves partners, addresses broader ocean issues, and is adaptive. NOAA should perform a systems analysis with respect to our desired outputs to guide our efforts. NOAA must continue to strengthen local and regional partnerships and improve existing regional coordination across NOAA and with other federal agencies, so that management activities at all levels flow from NOAA's ecosystem approach. If done correctly, this will result in the adoption of mutual goals and shared solutions to improve the regional services we deliver.

Climate

Taking the Pulse of the Planet – Integrate Global Observations

The United States is providing leadership in the Global Earth Observation System of Systems (GEOSS), to develop a comprehensive, sustained and integrated Earth observation system. NOAA must sustain existing critical capabilities, while improving the quality and broadening the application of our observations. NOAA must make use of our analysis capabilities to ensure that the data we collect are optimal in number, accuracy, and distribution. NOAA must ensure the continuity of NOAA observations and improve how we get data into our laboratories, add value through quality control and processing, and provide useful information to decision makers and the public. By 2011 NOAA must have in place an integrated observing and data management

system that ensures data flow from sensors through model output to our customers. This system must also have the capacity to handle the large volumes of data associated with GEOSS. Growth of GEOSS will be characterized by solutions with NOAA-wide applicability as documented in NOAA's Enterprise Architecture.

Advance NOAA's Modeling Capability

NOAA must develop a world-class environmental modeling capability and a commensurate high-performance computing infrastructure. NOAA's model approach must strive to meet all of NOAA's needs, ranging from research to operations, and must address issues relating to estuaries, oceans, weather, and climate change. It must be extendable to ecosystems as science matures and it must be commensurate with increasing data inputs from GEOSS, providing the best assessments and predictions about the future of the planet and its ecosystems. This requires an increased emphasis on developing and applying advanced data assimilation techniques to use in-situ and remotely sensed data in prediction models. It requires more computational power to increase temporal and spatial resolution of our forecast models down to urban scales, where demand for vital services is greatest. Resolution should be enhanced to improve local and regional benefits. We must actively continue to foster and strengthen our partnerships with the research community to improve our models and accelerate the transition of research into operations.

Weather and Water

TheWeather and Water target architecture will improve upon the baseline architecture through strategically driven research and development. The outcome of the target architecture will:

- Reduce loss of life, injury, and damage to the economy
- Support improved decisions with better, quicker, and more valuable weather and water Information
- Increase customer satisfaction with weather and Water information and services

Expand Tsunami Warning Network

NOAA plans to expand the U.S. tsunami detection and warning capabilities as part of the Global Earth Observation System of Systems (GEOSS), the international effort to develop a comprehensive, sustained and integrated Earth observation system.. It will enable enhanced monitoring, detection, warning and communications designed to protect lives and property in the U.S. and a significant part of the world. NOAA will deploy 32 new advanced technology Deep-ocean Assessment and Reporting of Tsunami (DART) buoys for a fully operational tsunami warning system by mid-2007. The new system will provide the United States with nearly 100 percent detection capability for a U.S. coastal tsunami, allowing response within minutes. The new system will also expand monitoring capabilities throughout the entire Pacific and Caribbean basins, providing tsunami warning for regions bordering half of the world's oceans.

Commerce and Transportation

Support the U.S. Transportation Systems

NOAA must continue to increase and improve the number and quality of products and services that contribute directly to the effectiveness and safety of the Nation's marine, aviation, and surface transportation systems. It is critical that NOAA identify validated user needs that cannot be met with existing information and work with our partners to determine how to best meet these needs. Many of the NOAA observing systems directly support the Nation's multi-mode transportation framework, upon which human safety, environmental health, and our national economy depend. NOAA must work with our public and private partners to conduct research and development in weather and geo-positioning to reduce the number of transportation-related fatalities and injuries, the variability in travel time, and the economic losses associated with weather-related inefficiencies in the transportation system. NOAA also must develop new and expanded partnerships to improve the translation of research into operational value for users of the US transportation system and NOAA must work to improve our ability to obtain and derive products from our observations for all modes of transportation. Through all of these efforts, NOAA must address safety, efficiency, and security risks associated with transportation "chokepoints".

Mission Support: Administrative and IT Services

Deliver Effective, Efficient Decision-Support Information

NOAA provides products and services, such as those for weather, climate, charting, and stewardship, that are vital to the safety, health, and welfare of our society.. Integrated information services delivery is a long-term NOAA objective. Efforts in this area are underway today with a regional focus, and will continue in FY 2005 and FY2006, accelerate in FY 2007, and require concerted effort for years to come. NOAA must investigate, develop, and expand the use of new technologies in data management and information systems, especially GIS, to accelerate the development and implementation of appropriate NOAA products and services and to integrate these services in ways that are meaningful to our customers. Integration of NOAA information across disciplines and across NOAA organizational elements will be driven by customer needs. NOAA should provide products, services, and prediction capabilities that deliver specific regional and local environmental information at all time scales that are relevant to decision-makers. To maintain efficiency, operational concepts must be reviewed and opportunities for efficiencies periodically identified. This objective is a primary element of NOAA's Enterprise Infrastructure Architecture.

Improve Administrative Programs

NOAA should continue to adopt best practices in all areas of administrative function to develop and defend budgets better, relate financial data to program performance, provide integrated planning and management across the agency, and support necessary process re-engineering. Because of the primary importance of administrative, financial and other corporate services to achieve each and all of our strategic outcomes, NOAA must provide the human and financial resources needed to carry out these functions efficiently and effectively in support of NOAA programs nation-wide. Improving Administrative Programs is critical element in NOAA's Enterprise Architecture.

Improve Critical Infrastructure and Services

NOAA should immediately develop effective capabilities to deal with increasingly sophisticated and proliferating cyber threats. All NOAA programs require robust, secure, and efficient information technologies (IT) to meet mission goals, outcomes, and performance measures. All programs and activities must be compliant with applicable Department of Commerce (DOC) and NOAA IT security policies. Priority must be given to those NOAA IT systems categorized as "national critical" functions. NOAA will support the Department of Homeland Security's Federal Emergency Management Agency through NOAA Weather Radio, with its ability to provide "all-hazard" alerts, and with other applicable NOAA hazard alert and warning dissemination systems. To guarantee the availability of NOAA's critical functions during a national emergency or a homeland security incident, we must meet all federal and DOC requirements for continuity of operations plans, including offsite backups for applicable systems and periodic drills. This initiative is one of the primary drivers of NOAA's Infrastructure Target Architecture.

Advance the Use of Technology

Many of our priorities such as data management and communication for observing systems, advanced GIS for decision support tools, increased sensor resolution for our platforms, and improved accuracy and type of forecasts require the application of new technologies. By 2011, NOAA must have a culture, process, and systems approach that can plan for and seamlessly apply new technologies to realize our goals. The impact of our new and existing operations, products, and services must be sustained by considering the changes in technology over time. However, they must remain compatible with the evolving needs and means of the external community. NOAA should capitalize on technologies readily available in the commercial and government marketplace. We must be aware of our niche in the technological environment, both as a provider and a user of innovation, and we must be dynamic participants within this environment. The NOAA Enterprise Architecture is one of the primary tools NOAA has readily available to make IT investment decisions about emerging technologies.

5.1.6 NTIA

The target architecture provides a vision for modernization and improvement in all areas of the architecture. This effort was done in conjunction with reengineering of core business processes. Many of these reengineering ideas translate into the key leverage points of the Target Architecture:

- Data Access & Consolidation – define the need to consolidate data using data warehousing techniques as well as the development of a robust reporting and analytical component through the use of business intelligence.
- Process Automation & Workflow – define the need to automate initial requests and standard processes via web forms based technology with pre-populated fields which will facilitate rules-based processing and status tracking within the target environment.
- Document Management – define the need of NTIA to perform document capture, archiving, and sharing through a collaborative environment.
- Electronic Case Management & Collaboration – further define functionality within the concept of Knowledge Management to incorporate the segmentation of information and collaboration around a particular event, issue, and or project.

- Spectrum Analysis Tools – define the need to rationalize interference analysis models and allow for their access via shared web portal framework.

At a high level, the OSM Target EA envisions two main departure points from today:

- Web Services Oriented Architecture (SOA) to facilitate enterprise integration – with the advent of the Internet and extensible markup language (XML) technologies, a new architectural design paradigm has arisen that facilitates much more flexibility and radically improved interoperability between system components. In essence, the traditional notion of a business application is deconstructed into its component parts, often called service components, which leverage the common messaging language of XML to get things done.
- Generic Process Archetypes –a key theme of the Target EA is that system interoperability is often more important than system capabilities. Put another way, this idea means that solving generic problems common to several areas of the business is more valuable than solving the most specific problems of each area. This notion leads us to consider how the OSM's business processes fit into two generic process archetypes: Content/Case Management and Application Processing.

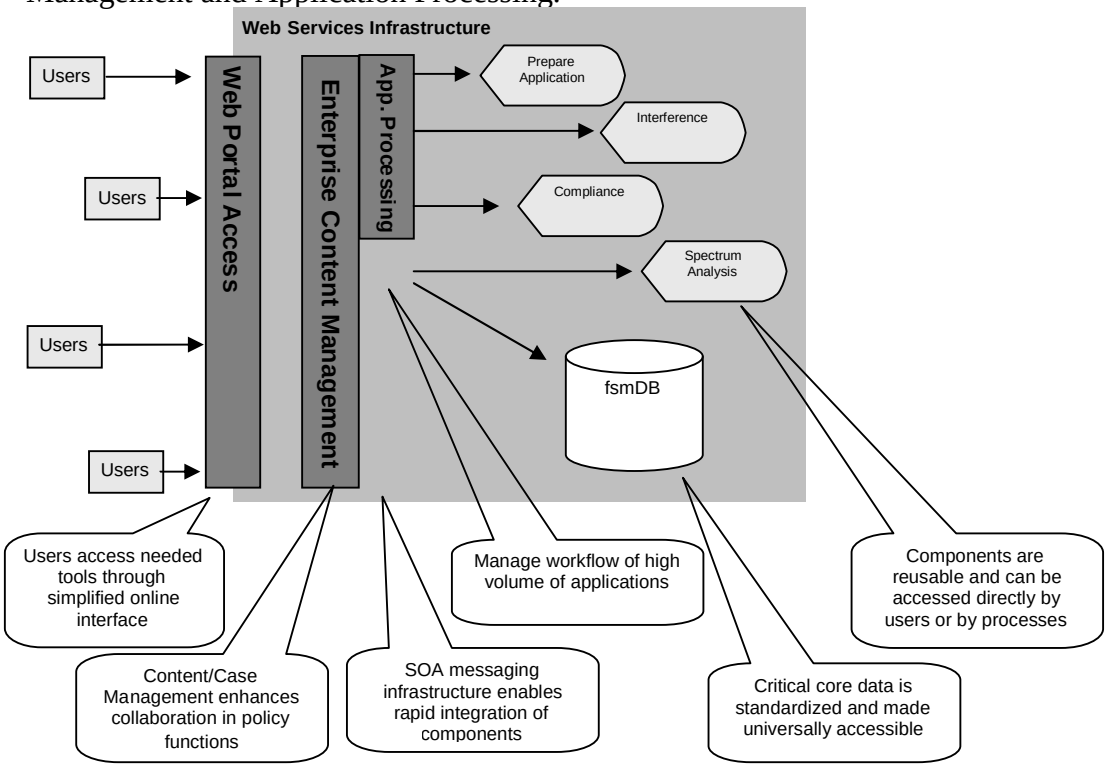


Figure 15 - High level Architecture Concept

Taken together, as shown in Figure 1, these ideas lead to a simplified view of the target EA. In essence, both the business processes and the applications must be deconstructed and re-architected. For example, rather than designing individual applications for Frequency Assignment and Spectrum Certification, ITD must consider how to build a common platform for processing applications by using web templates and reusable analytical components. Granted, some of these components, such as rule compliance, may only be useful for one specific process. The bulk, however, are often shared and thus interoperable.

Enterprise content management, on the other hand, stands to provide tremendous support and automation where there is little today. The subject matter and work of the various policy and rulemaking processes can be highly variable and can frustrate standardized processing strategies. We should remember, however, that nearly all of the work is document-based. Advanced ECM techniques and tools can dramatically improve the tasks of sharing and processing documents in a case or team-room environment, providing automation to the common rulemaking tasks of information sharing, collaboration, and review. Finally, these tools may prove sophisticated enough to act as a workflow infrastructure for the application processes as well.

5.2. Data Architecture

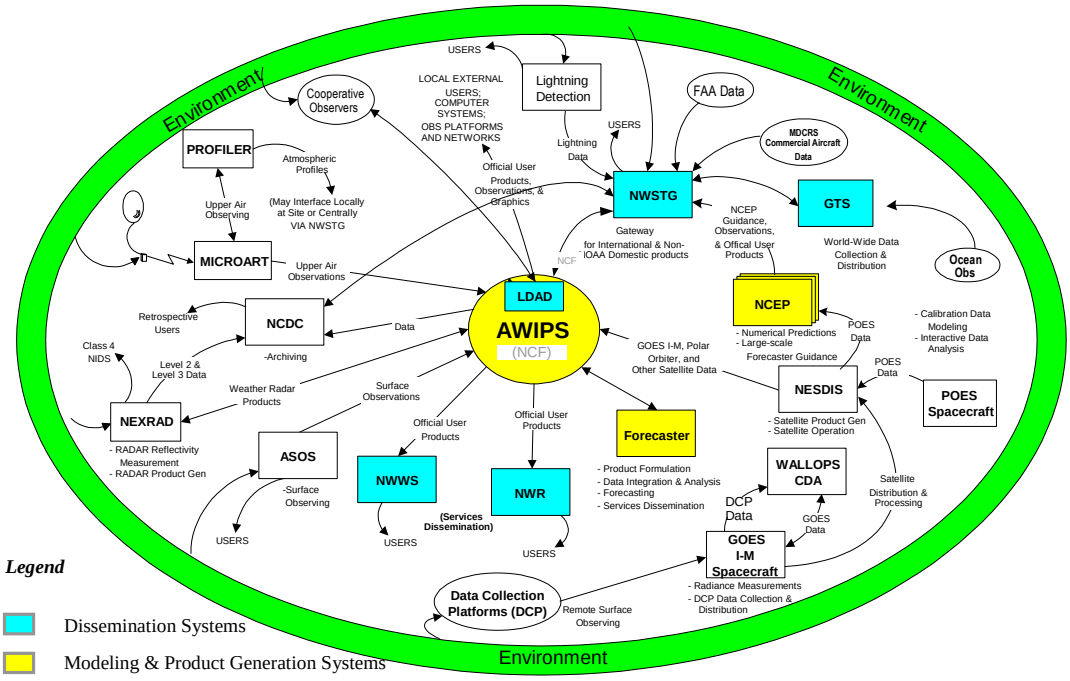
Data management is the key to achieving real integration of systems and services. Centralization and elimination of redundant data will greatly reduce the amount of data stored. This is not critical in terms of online storage costs, but quickly becomes critical in terms of the ability to backup and archive the data.

A key part of the process of data management is standardization of data definitions and normalization or data records. This process is already underway in the Administrative Management area by use of a standardized XML schema to provide the translation between various systems. This schema provides common definitions of all data elements and a means of translation between the systems. As and when the existing legacy systems are replaced, this schema will then become the data definition of the new system, eliminating a costly and time consuming translation process.

There are many data elements common to many or most systems that deal with public or business information, such as name, address, phone number, etc. The DOC will be studying the efforts of several groups working on standard definitions, particularly the ISO/IEC 11179. Additionally DOC is a participant in the Geospatial One-Stop project to facilitate access to Geospatial data.

At the operating unit level the figures below depict the target data architecture for the NOAA weather and water line of business and the telecommunications data gateway for the NWS.

Major Systems Overview



* Note some systems perform multiple functions, e.g. LDAD disseminates information and receives observations

Figure 16 - Target Data Architecture for Weather and Water

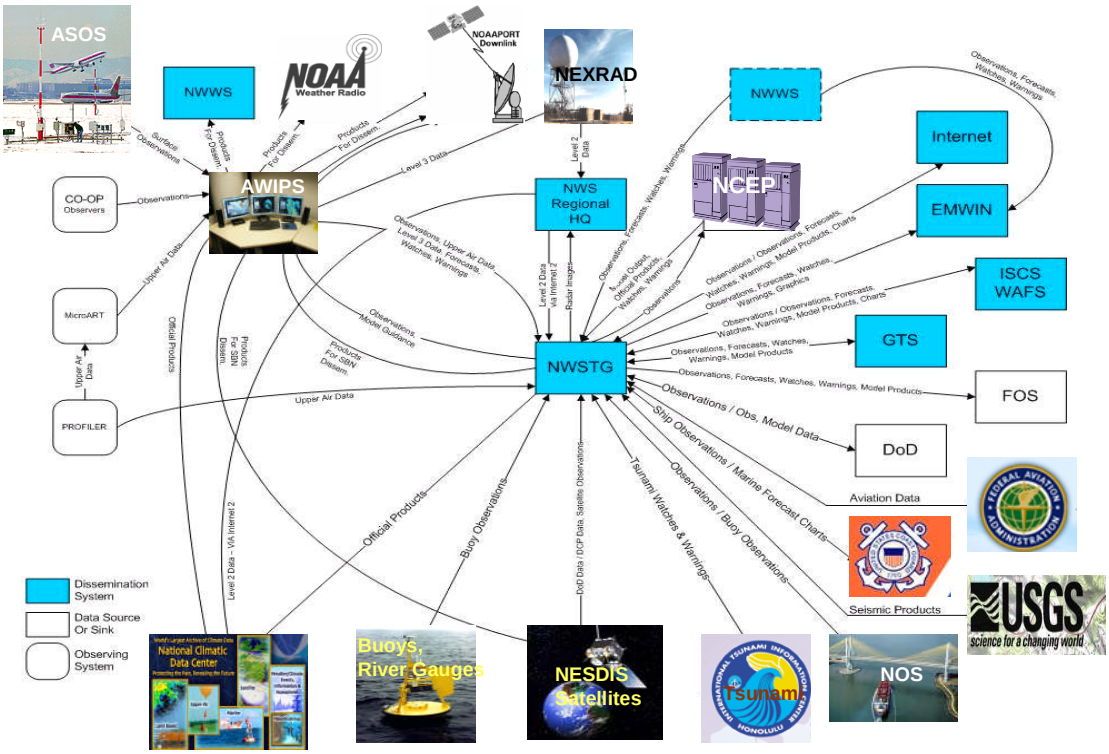


Figure 17 - NWS Telecommunications Gateway Data Flow

5.3. Applications Architecture

5.3.1 Enterprise Application Target Architecture

5.3.1.1. Financial Management

The Commerce Administrative Management System (CAMS) is the core piece of the financial accounting and management system. Additional functions such as Time and Attendance, Travel, and others were designed to layer on top of the financial package.

Implementation of the core financial portion of this system is complete. The initial plan provided DOC the ability to integrate the varied financial systems used by the different operating units throughout Commerce into one consistent unified system. However, because of the rapid and significant changes in technology and capabilities since the CAMS plan was first put forth, the plan was scaled back to incorporate only the core financial system. The additional components will be built or purchased as off-the-shelf modules and integrated with the core financials.

An Enterprise Application Interface (EAI) is being used to provide seamless integration between the existing legacy components and all new components. This product utilizes a standardized XML schema along with translation services to move data between the various systems in real time. It employs a messaging component that defines the destination of the data and the transaction to be completed. Each application that does not already utilize the standardized schema will be required to have a translation process that converts its native format to the XML schema or vice versa depending on the direction of the transaction flow. Each software package must be capable of interfacing with other DOC and external systems in compliance with the DOC TRM.

In addition to the processing system, an Executive Information System has been deployed to allow managers to access and utilize the data contained in the CAMS system and all others attached to the EAI for use in planning, forecasting and reporting. This system utilizes the EAI to draw data and information from a collection of systems and provide a far more detailed picture of the DOC at any point in time. A technical representation of the EAI and the Executive Information System is shown in figure 18 below.

The goal for this is to be able to establish full transactional workflow between the various components of the DOC administrative management systems in a low cost, low impact manner. The EAI achieves this in that it requires minimal change to the existing systems, and maximizes the capability to use the information they contain. The long term goal is to migrate all of the various systems to a common data definition, removing the necessity for the translation function and further reducing overall complexity and cost. As each system currently using the translation function is replaced over time, the new system will be required to fully implement the standardized XML schema as the source of its data definitions, eliminating the translation step completely over time.

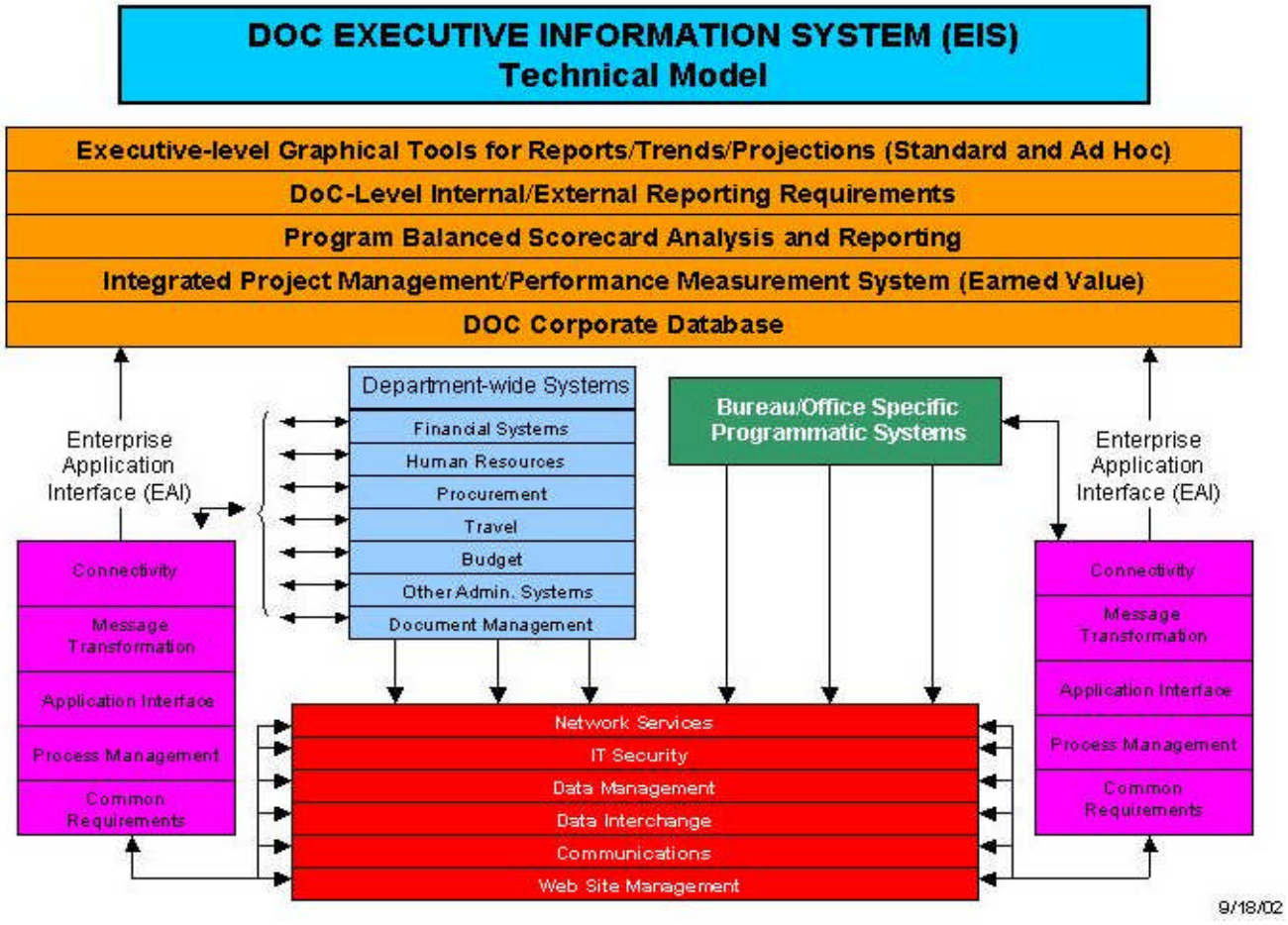


Figure 18 - DOC Executive Information System (EIS)

5.3.1.2 Human Resource Management

DOC is participating in the Human Resources Line of Business initiative and its target architecture is dependent on the final implementation of this initiative. In participating, DOC is studying how to provide the level of integration with other DOC systems in order to provide all of the functionality required to support the Department

5.3.1.3 Supply Chain Management

The CSTARS system is the primary system for procurement. It currently provides reporting capabilities on all aspects of procurement. The target for this function is to add a Web-based user interface in compliance with the DOC TRM, which will provide end-users access to the system regardless of their location. Additionally, it will remove the necessity for installing and maintaining client software on each user's system. In conjunction with the EIA capability mentioned above, CSTARS will have the ability to initiate a procurement action, have that action routed to each appropriate approving official in proper order, and register the transaction in the CAMS system at the appropriate point in the process. This will provide true procurement workflow control, which will speed the process, as well as removing any manual steps to record the transactions in the financial management system. This will reduce the time and effort involved in the procurement process, provide real-time integration of the procurement process

with the financial management process, provide up-to-date financial information at any point in time, and increase the overall efficiency of the process.

5.3.1.4 Property Management

The current systems in use to deploy the remaining Administrative Management functions for the DOC are typically standalone point solutions with little or no integration into other related systems. The deployment and management of these solutions is very segmented, and there is most likely some duplication in terms of software packages used throughout the DOC.

The areas covered in this segment are as follows:

- Travel Management
- Facilities Management
- Personal Property Management
- Real Property Management
- Correspondence Tracking
- Document Management
- Asset Management

Travel management is being addressed by the E-Travel initiative, which provides the end-user the ability to make their reservations through a government-wide system. This system uses a Web-based interface tied to a centralized system and reduces the cost of making reservations significantly.

The rest of these areas are being evaluated and teams have already been established to make recommendations for Asset Management and Document Management. The target is to determine what the overall DOC needs are in each of these areas and then to migrate to a common solution deployed across the DOC.

In some instances, such as the various property management functions as well as asset management there is also an opportunity to interface with other systems to provide a greater level of information and better capability to manage the resources of the DOC.

5.4. Infrastructure Architecture

The DoC acquisition system will operate in a web-based single-point-of-entry environment utilizing the existing LAN/WAN environments to provide access to the acquisition system. The target technical architecture will consist of one or more application servers and databases that will be hosted at one central location, the Office of Computer Services (OCS).

Figure 20 below depicts the target technical architecture for the new acquisition platform at DoC. The exact configuration of the environment will be based on the selected vendor(s) requirements, DoC enterprise architecture framework, security requirements and system user base and volume.

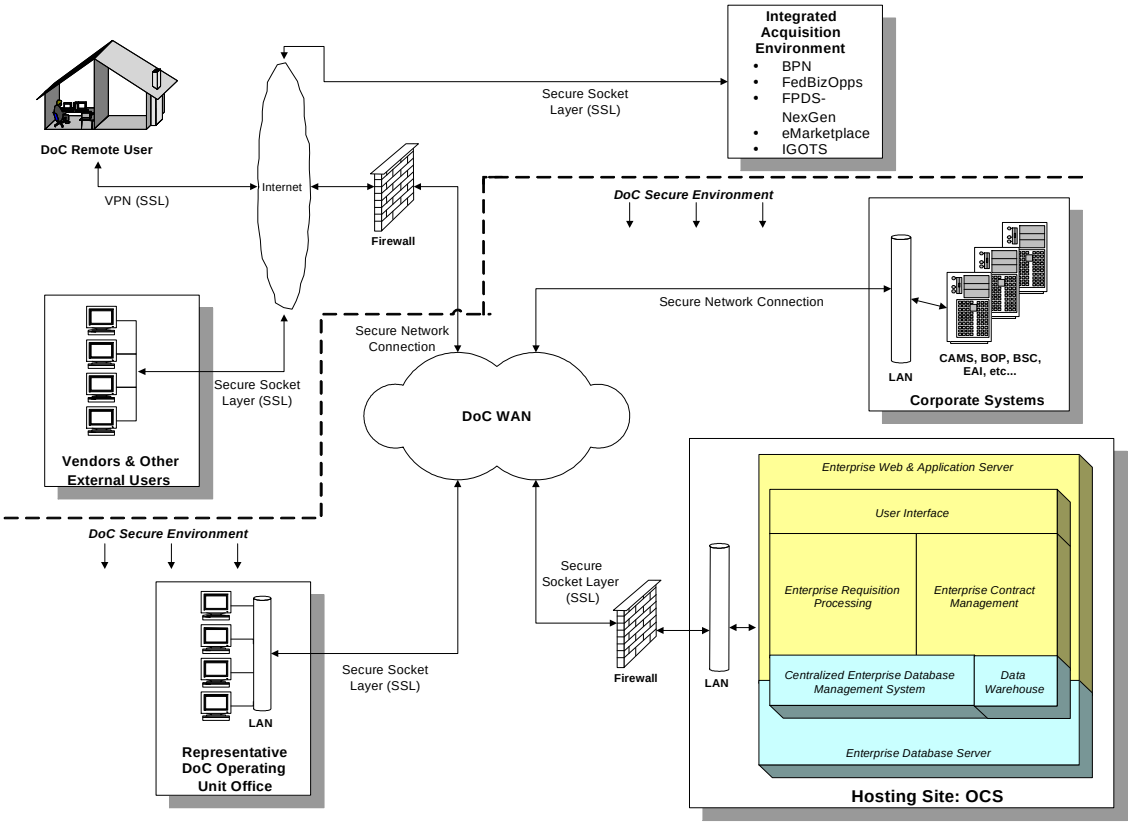


Figure 19 - Target Technical Architecture

DoC acquisition system users will access the system through a secure network connection via their web browser. Remote users will have the ability to access the acquisition system via standard secured network access such as Virtual Private Network (VPN) or Remote Access Servers (RAS).

DoC requisition personnel, procurement analysts, and contract specialists will be able to use the new acquisition system for all of their acquisition activities. It will provide them with a single enterprise-wide business process that integrates the acquisition, budget, and finance community with an automated workflow. This automation will eliminate manual handoffs between departments and will establish an audit trail of each acquisition action. In addition, acquisition data will be stored in a consolidated enterprise database. This will provide DoC with a central data repository instead of having numerous disparate databases. This data will be available to the acquisition community for management reporting and analysis.

An interface will be developed with the DoC financial system, CAMS, through a secure network connection. The capabilities for this interface are detailed further in the Interface Control Document. The acquisition system will also interface with BOP in order to electronically communicate solicitation data. These interfaces will meet and comply with all network security requirements. In addition, the acquisition system will be compliant with the requirements of Section 508 and the DoC security policies and standards.

The new acquisition system will also leverage and support various components of IAE. This support will come by the utilization of some IAE component functionality including the FedBizOpps, BPN, FPDS/FPDS-NG, PPIRS, eMarketplace, and IGOTS initiatives.

Moving to the target acquisition system architecture will necessitate a process reengineering and change management effort. Process reengineering is required to match the DoC desired flows of work (i.e., processes) with the capabilities of the acquisition system. Change management will be needed to facilitate user adoption of the new system. A change management plan will be created to detail these modifications and to provide an implementation model for the new system.

DOC is participating in the Human Resources Line of Business initiative and its target architecture is dependent on the final implementation of this initiative. In participating, DOC is studying how to provide the level of integration with other DOC systems in order to provide all of the functionality required to support the Department.

NOAA Target Network Architecture

NOAA's Target Network Enterprise Architecture will simplify the complex Network Enterprise Architecture described in Section 4.4. The Target Architecture will move towards a single MPLS (Multi Protocol Label Switching) IP network that will rely on standards based and vendor supported Virtual Private Networks (VPNs) to support independent security policies and performance requirements. The Wide Area Network will be complemented by Metropolitan Area Networks wherever possible and projected return on investments will enable NOAA to implement increased local diversity at major locations with offices sharing local network access. The figure below provides a conceptual diagram of NOAA's Target Network Architecture.

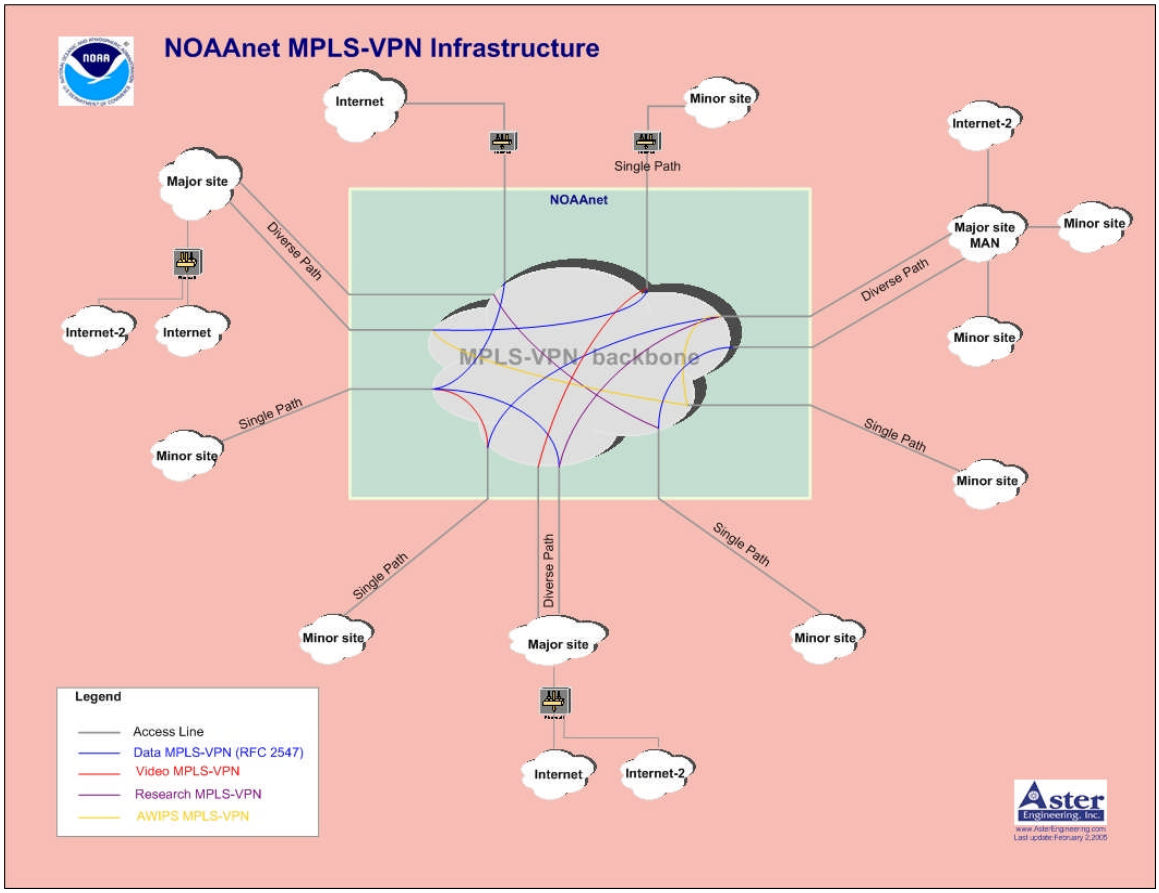


Figure 20 - Conceptual Diagram of the NOAA Target Network Architecture

5.5. Security Architecture

The vision target architecture for the Department of Commerce is a Service-Oriented Architecture (SOA), as shown in the figure below, which would eliminate duplicate security services used by Operating Units and their various systems. Security services support devices and applications examples are Public Key Infrastructure, Anti-Virus, Anti-Spam, Intrusion Detection, VPN, Digital Signatures, Cryptographic, and Auditing. Security drivers create requirements that generate Architecture Principles that would be derived from the Strategic Planning Process. The development and installation of a department-wide asset management system and directory services would be a requirement for the SOA.

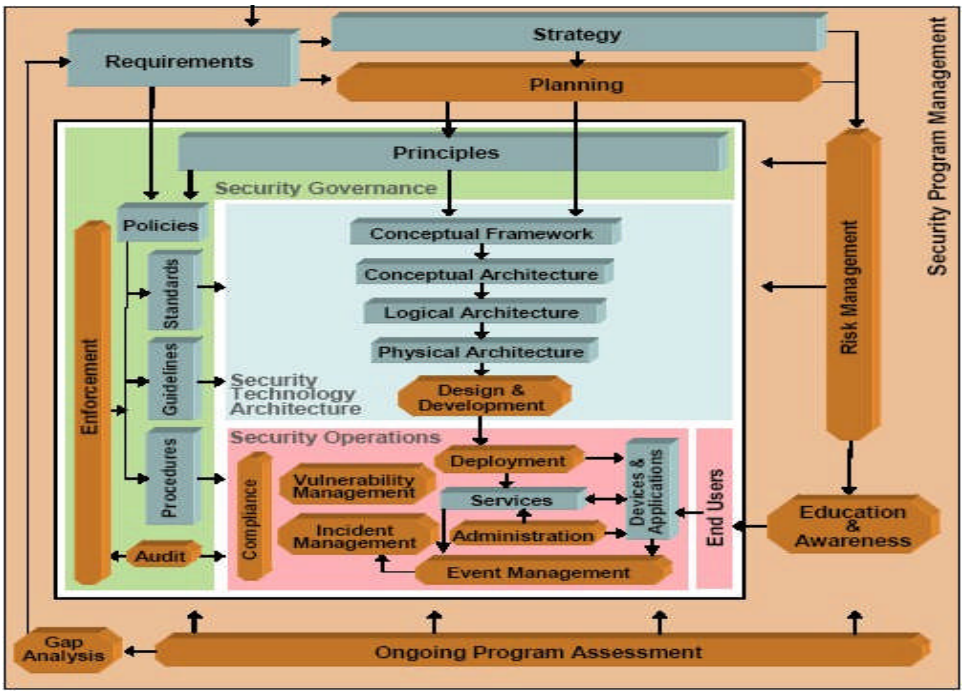


Figure 21 - Target Security Architecture

The Security Operations would serve to be consolidations of Computer Incident Response Teams (CIRT) that would provide the hosting of security services for the department. CIRT will provide for vulnerability management by identifying high-risk components and then determine the appropriate actions to be taken based on the assessment of the vulnerability. CIRT will provide for Incident management by responding to security related events that indicate a threat or has violated security policy that was selected from the repository. CIRT will provide for the process of securing the organization's operational digital assets against accidental or unauthorized modification or disclosure. CIRT will ensure that the deployment of technology will conform to DOC organizational policies, procedures, and architecture. CIRT will provide for Event management by monitoring the daily occurrences of informational messages provided by different storage, network, security, and host devices.

External requirements include security threats (e.g. my doom, sql slammer, code red) and legal and regulatory compliance requirements (e.g. FISMA). Requirements drive the deployment of the security program strategy as well as the planning process. Risk management is the crucial process of determining the acceptable level of security risk at various points in the enterprise

DOC IT system and then implementing the optimal level of management, operational, and technical controls; to little may result in making the enterprise vulnerable, and to much may result in unnecessary costs. Education and awareness are critical to the success of the security program. Security professionals should receive training on the latest security advancements and techniques, and end users need to become more security aware of all applications and devices.

Ongoing program assessment of the entire program management area will keep the process updated and functioning at its peak performance levels. An example of assessment at the governance level would be the Certification and Accreditation process in which system owners must ensure a complete recertification / accreditation has been performed at least every three years, or upon a major change to the system. Another example would be assessing the various areas in the security operations area, such as keeping abreast of the latest intrusion detection systems, and should the vulnerability management area be upgraded to an Intrusion prevention system. The ongoing assessments will provide valuable information that will provide gap analysis between the time the systems are recertified and other self-assessments. The gap analysis will then be able to provide input to a new set of requirements that where derived from the gap analysis.

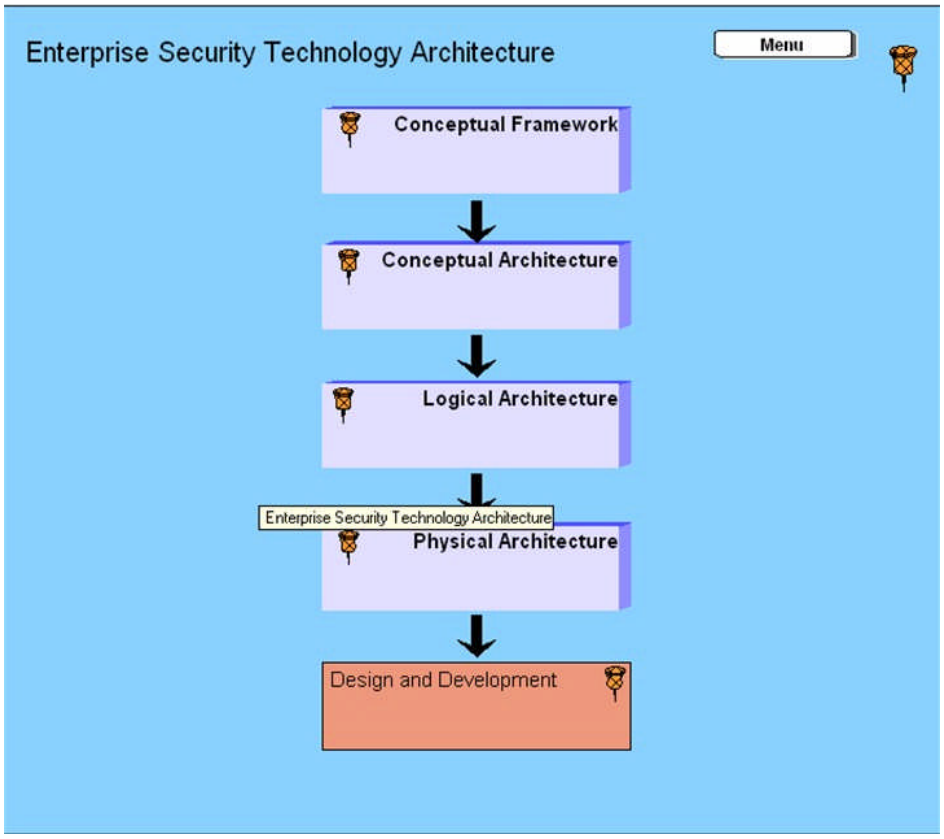


Figure 22 - Metis View of Enterprise Security Technology Architecture

The Conceptual framework provides for a department-wide policy repository that allows the Operating Units to access it freely and provides them with a mechanism where they can apply security policies to security services selected.

Conceptual architecture describes the management of decision over the broad set of security services. Examples of the structures for management of decision are identity, access, or configuration management. Identity management services are responsible for assigning and maintaining digital identities and associated attributes across the DOC network environment and for deleting identities when they no longer represent valid users of the environment. Access management services are responsible for assigning and maintaining resource access privileges across the DOC network environment and for terminating those privileges when they are no longer required. Configuration management services are responsible for consistently setting and maintaining the security configuration across the DOC network environment.

The Logical architecture provides more details on the logical components necessary to provide each DOC security services.

Physical architecture identifies specific products, showing where they are located and how they are connected to deliver the necessary functionality, performance, and reliability.

Design/Development is the integration of applications into DOC security environment by using various tools, templates, libraries and guides.

6. Department of Commerce Gap Analysis and Migration Plan

The department level gap analysis and migration plan is shown in Table 7. The operating units also prepare gap analysis and migration plans for their level of the enterprise architecture. Examples of the operating unit level gap analysis and migration plans are provided. The complete plans are available in the reference materials.

6.1. Department Level Gap Analysis

DOC has identified each aspect of the gap that exists between the current state of its use and/or implementation of its EA a developed a migration path to the appropriate part of the target EA.

Table 10 – Gap Analysis

Line of Business Subfunction	Target State	Current State	Actions
Web Site Management	Integrated Content Management	Web sites updated by HTML coding	1. Complete pilot deployment of Stellant 2. Develop interfaces to content sources
Communications	Integrated Directory Services with established hierarchy and automatic updates	Directory Services not integrated, updated by file transfer on non-regular schedule	1. Define capabilities of existing systems 2. Develop and establish coordination across all of DOC
	DOC-wide coordinated 2-way communications and notifications for all employees	Emergency notification and communications is disjointed and incomplete	1. Pilot implementation using phone, email and PA systems 2. Develop plan to role out DOC-wide
Financial Management	Web-Enabled Applications	Client/Server based applications	1. Complete feasibility study for re-engineering to n-tier architecture.
	E-Travel integrated into CBS	E-Travel data passed by file	1. Define interchange API 2. Define common data elements definitions 3. Establish & Implement business rules
Supply Chain Management	Web based single point of entry	Client/server with several systems to negotiate	1. Design new workflow 2. Construct integrated portal for CBE 3. Reengineer systems to utilize an n-tier architecture
	Seamless interface to CBS	Data passed manually or by file transfer	1. Implement Tibco interface between CBS & CBE
Human Resource Management	OMB HR Line of Business	Multiple point solution systems	2. OMB completes LOB implementation plan 3. Identify gaps with current systems & requirements 4. Define interface to other DOC systems

6.1.1. ITA Gap Analysis

The series of tables below provides a Gap Analysis in SWOT (Strengths, Weaknesses, Opportunities and Threats) format.

Lotus Notes Databases

Table 11 – Lotus Notes SWOT

Strengths ▪ Easy for business to deploy and use ▪ Integrated with e-mail, can be web-enabled ▪ Workflow enabled	**Weaknesses** ▪ Does not manage structured data well ▪ Does not manage content and documents across the ITA "enterprise" ▪ Web-enabled Notes databases do not make good web sites ▪ Many Notes databases undocumented and not formally managed.
Threats ▪ Ongoing improvements are largely "tinkering" ▪ Frustrate users who require specific features ▪ Costly for OCIO to support and maintain ▪ IBM will not support in the future	**Opportunities** ▪ Migration of web-enabled Notes sites to standard ITA web environment ▪ Replacement of client management Notes databases with CRM system ▪ Standardization of Notes databases so that the same database is used for multiple purposes

Overall ITA Web Presence

Table 12 – ITA Web Presence SWOT

Strengths ▪ Responsive to small groups and individuals ▪ Starting to have same "look and feel" (ITPS) ▪ Strong business owner-ship, e.g. ITPS team, other HQ and field web teams ▪ ITA has learned a lot about use of the web	**Weaknesses** ▪ Application development tools and technologies are all over the map ▪ Support responsibilities are scattered across OCIO, program units, and contractors ▪ Integration across sites very limited – a lot of copying and pasting of web content ▪ Personalization, single sign-on, content aggregation, eServices not supported.
Threats ▪ ITA web presence confusing to U.S. exporters and public ▪ Web presence does not reflect ITA strategic goals ▪ Real costs are higher than anticipated	**Opportunities** ▪ ITPS content management pilot offers opportunity to create new, standard web platform for reuse by other business units/processes ▪ Some independently funded sites, e.g. BISNIS, have a high quality technology platform that could be leveraged.

Customer Relationship Management

Table 13 – Customer Relationship Management SWOT

Strengths ▪ Business units know their own customers and what they need	**Weaknesses** ▪ ITA employees not aware of customer contacts by other units or sub-units. ▪ Trade Event management fragmented ▪ Marketing support limited ▪ Customer service fragmented
Threats ▪ Effective, accountable customer management is very hard ▪ Customer data is "stovepiped"	**Opportunities** ▪ ITA reorganization eliminates some organizational obstacles ▪ Sharing of data between international and

	domestic components of ITA can be realized by the ITA CRM acquisition ▪ Customer analytics capability ▪ Leverage ITPS content management

Data Analysis Applications and Tools

Table 14 – Data Analysis Applications and Tools SWOT

Strengths ▪ Pockets of excellence, e.g. TradeStats Express ▪ Innovative use of MapInfo Geographic Information System (GIS) ▪ Expert use of SAS tools to analyze trade data for dumping violations	**Weaknesses** ▪ Application maintenance burden falls on business users. ▪ Lack of data-standards, e.g. industry codes. ▪ Different data for different audiences and interest groups. ▪ Technical issues difficult for business people to manage**.** ▪ No ITA "corporate" ownership of data.
Threats ▪ Analysis of field-based data is very limited. ▪ Hard to test soundness of strategies ▪ ITA vulnerable to product vendors.	**Opportunities** ▪ ITPS offers opportunity to create new, standard web platform for reuse by other program units/processes ▪ CRM project will eventually consolidate analytics for customer data ▪ Some independently funded sites, e.g. BISNIS, have a high quality technology platform that could be leveraged.

Administrative and OCIO Systems

Table 15 – Administrative and OCIO SWOT

Strengths ▪ CIO and CFO organizations are standardizing processes and supporting IT tools ▪ Performance mgmt culture is growing	**Weaknesses** ▪ Customer service culture just starting to take hold – will take time ▪ Resource management highly political and territorial ▪ HR and business view of HR needs not always consistent
Threats ▪ No explicit integration between CFO/CIO tools and business initiatives such as CRM	**Opportunities** ▪ ITA reorganization offers new opportunities for enterprise administration

Technology Infrastructure

Table 16 – Technology Infrastructure SWOT

Strengths ▪ Worldwide Windows 2000 standardization ▪ High bandwidth for many foreign posts ▪ Email consolidation in progress	**Weaknesses** ▪ Network bandwidth requirements always increasing – especially for the domestic and international fields ▪ Groupwise and Lotus Notes mail and OA tools still co-exist in HQ building
Threats ▪ Funding to support continuing desktop and network upgrades.	**Opportunities** ▪ U.S. network bandwidth upgrade ▪ T-3 upgrade in HCHB building ▪ Continuing foreign bandwidth upgrades

IT Management Services

Table 17 – IT Management Services SWOT

Strengths ▪ Recent adoption of ITIL best practices for IT management ▪ High motivation to improve	**Weaknesses** ▪ Early understanding of ITIL processes for OCIO managers, but not a lot of experience in successful implementation ▪ Because of various constraints, implementation of only a few ITIL processes are underway ▪ System support limited, e.g. Remedy
Threats ▪ Focused on upgrades, not on process.	**Opportunities** ▪ U.S. network bandwidth upgrade ▪ T-3 upgrade in HCHB building ▪ Continuing foreign bandwidth upgrades ▪ Application of IT best practices for current enterprise IT projects

6.1.2. NOAA Gap Analysis

NOAA Ecosystems Gap Analysis

Table 18 – NOAA Ecosystems Gap Analysis

Component	Gap
Coral Reef Conservation Business Architecture	1. Ability to address all federal and state actions 2. Capacity to fulfill invasive species protection mandates 3. 1M acres of restored habitat 4. Ability to carry out NOAA's trustees responsibilities 5. Analysis of mapped habitats 6. Characterized and mapped habitats 7. Decision support tools
Coastal & Marine Resources Business Architecture	1. Protection, Management and Restoration of Coastal and Marine Resources 2. Technical Assistance and Training for Place-based Management 3. Program Review, Evaluation, and Performance Measurement 4. Conservation and Acquisition of Coastal Areas 5. Environmental Observations and Ecological Modeling 6. International Cooperation for Managed Resources 7. Place-Based coordination and Integration for Ecosystem Management 8. Outreach and Education 9. Development, Designation and Approval of Coastal and Marine Resources 10. Applied Research and Technology Development for Coastal and Marine Resource Management 11. Protected Areas Facilities and Infrastructure
Protected Species Business Architecture	1. Increased capabilities for Recovery and Conservation 2. Increased capabilities for Listing 3. Increased capabilities for International 4. Increased capabilities for Outreach and education 5. Increased capabilities for Proactive Conservation
Fisheries Management Business Architecture	1. Increased capabilities for Fishery Plan Development 2. Increased capabilities for Regulatory Analysis, Evaluation and Implementation 3. Increased capabilities for Economic Sustainability 4. Increased capabilities to Invest in State Partnerships 5. Increased capabilities for International Coordination and Cooperation 6. Increased capabilities for Fisheries Policy Development and Implementation 7. Increased capabilities for Outreach and Education
Aquaculture Business Architecture	1. A legal and administrative framework for aquaculture in the Exclusive Economic Zone (EEZ) 2. sound science for the responsible development of commercial aquaculture and stock enhancement 3. Ecosystem and human health requirements and protocols for marine aquaculture 4. Additional Education and Outreach 5. Transfer technology to increase production
Enforcement Business Architecture	1. Additional Investigations 2. Additional Patrol and Inspections 3. Additional Outreach and education

Component	Gap
Ecosystem Observations Business Architecture	1. Enhanced Fishery Monitoring and Assessment 2. Additional Protected Species Monitoring and Assessment 3. Enhanced Economic and Social Monitoring and Assessment 4. Enhanced Data management, technology transfer, education, and outreach 5.Additional Ecosystem monitoring, assessment, and forecasting
Ecosystem Research Business Architecture	1. Additional Research to determine the structure, function, and condition of ocean, coastal, and Great Lakes ecosystems, including their component parts. 2. Additional Research focused on better understanding the causes and consequences for the current condition of ecosystems 3. Additional Research for the development of ecosystem models to forecast changes to ecosystems and their component parts. 4. Integration and application of socioeconomic information with ecosystem models. 5. Explore and characterize the global ocean. 6. Ecosystem tools and technologies 7. Informed decision-making through knowledge transfer.

NOAA Climate gap analysis

The weakest capabilities for the **Observations and Analysis** component are Arctic observations, data stewardship, analysis of data derived from these observing systems, and process oriented research to extend the horizon of climate predictability and projection.

The weakest capability for the **Climate Forcing** component of the program is the ability to globally monitor the climate forcing gases and to characterize key aerosol distribution and properties that are critical for near-term decision support.

The weakest capability for the **Predictions and Projections** component of the program is research into intraseasonal weather-climate interactions and better product development through a climate model test bed.

The weakest capability for the **Ecosystems** component of the program is to significantly expand geographic coverage for climate regimes, ecosystem productivity, and coastal ecosystem responses to climate change, especially inundation impacts from rising sea levels.

The weakest capabilities for the **Decision Support** component of the program are with research and development of products and services for national and regional sectors, transition of research products to operations, and operational production and delivery of regional, state, and local climate services.

NOAA Weather and Water Gap Analysis

Key Improvements

- Weather Information
- Water Resource Predictions

- Air Quality
- Coasts, Estuaries, and Oceans
- Integrated Observations
- Environmental Modeling

Weather Information

Critical weather information falls short of national needs and expectations

- Observational Deficiencies
  - Accuracy, resolution, discrimination, coverage, observed parameters
  - Space weather dependency on ACE satellite
- Forecasting Deficiencies
  - Accuracy (intensity, lead time, false alarm rate), confidence estimates

Critical information delivery does not meet national needs

- Warning Dissemination: security, reliability, architectural flexibility
- Supporting IT: security, data processing, telecommunications

Public preparedness not uniform nationally

- Partner contact, training, service use lacking

Water Resource Predictions

Operational products limited and based on 1970s science

- Do not provide complete range of required products
- Based on empirical and statistical models

Uncoordinated line office products and services

- NWS, NOS, NESDIS meeting separate national needs
- Complicates user decision making & inefficient

Technology infusion fractionalized and inefficient

- Incapable of delivering timely Science & Technology in cost-effective manner

Socioeconomic needs and benefits not well understood

- National water resource information needs not adequately addressed

Air Quality

Limited capability to produce operational air quality forecasts nationwide

- Ozone forecast capability only partially deployed—limited to 24hr
- No capability to forecast particulate matter and other important pollutants

Limited scientific basis for developing required operational forecast capability

- Particulate matter and other important pollutants science incomplete
- Predictive capability for all pollutants inadequate beyond 24 hours

Limited observational basis for conducting required air quality research and assessments

Coasts, Estuaries, and Oceans

Critical weather & water information falls short of national needs

- Observational deficiencies
  - Coverage and observed parameters
- Forecast and assessment deficiencies
  - Accuracy (intensity, lead time, false alarm rate), scope

Critical information delivery does not meet national needs

- Multiple sources for products –overlaps & gaps

Independent LO and limited inter-LO products & services

- Conflicting user interpretation
- Inefficient NOAA operations
- Slower overall improvement in coastal zone products & services

Integrated Observations

Current observational capabilities do not meet requirements

- Insufficient measurements, temporal/spatial resolution, accuracy, coverage

Isolated, narrowly focused projects – "stove pipes"

- Unsynchronized deployment of sensors and platforms
- Lack of consideration for NOAA-wide interdependencies
- No common design architecture or integration roadmap
- Opportunity cost from not responding to external capabilities

Lack comprehensive business management process

- Independent R&D, acquisition and sustainment—limited coordination
- Inadequate process and feedback standardization
- Incapable of delivering timely S&T infusion in cost-effective manner

Environmental Modeling

Insufficient Accuracy:

- Inability to adequately represent and predict complex atmospheric and oceanic processes at necessary resolution
- Inadequate representation of coastal & ocean environment
- Inability to account for biogeochemical processes in climate studies

Insufficient Scope of Model Predictions:

- Insufficient coverage for the Nation's ports, bays, estuaries, harbors and coasts
- Inability to model complex interactions across differing media
- Inadequate predictive capabilities supporting ecosystems, surface transportation, air quality, water resources, …

Limited infrastructure capabilities:

- Coding and design standards --within NOAA – within scientific community

- Inadequate exploitation of existing science – poor research to operations throughput
- Limited interoperability of NOAA's climate, weather, ocean, water, and ecosystem models

NOAA Satellites Gap Analysis

A number of program gaps (in priority order) are listed below. These gaps are prioritized based on the link to the mission goals and key user driven requirements. For cross-goal coordination, we work with mission goals to prioritize present and future satellite products, and have developed satellite requirements based on mission goal needs. This coordination is part of the overall effort to develop and sustain an integrated observing system within an Enterprise Architecture.

- IJPS Network Operations Center. Without increased funding, Satellite Services will be unable to maintain the service between NOAA and EUMETSAT under the Initial Joint Polar Satellite (IJPS) agreement. This will result in the following: loss of Polar data from the morning METOP satellite, which is to be provided by EUMETSAT through this communication service; loss of planned command capability through Svalbard, Norway, for the POES satellites; loss of ability to provide contingency support for the METOP satellites as required by the IJPS MOU; and loss of ability to provide or receive blind orbit support as required by the IJPS MOU.
- GOES R Acquisition Requirements. Without the increase FY07-10 funding of $23 million, for Solar Imaging Suite Flight Model (FM) 1 for the GOES-R mission, the SIS FM1 will be at high risk to be delivered in time to meet the launch of the first GOES R satellite causing a likely gap in solar imaging coverage between the GOES-N series and the GOES-R series. This gap was caused by the FY06 Commerce pass back reduction of $20M.
- Data Exploitation and CLASS. Although not contained in the Satellite Sub-goal, we want to stress the importance of data exploitation and data management systems in deriving the intended benefits from satellites systems for NOAA's mission goals and customers.
- NPOESS 6.7 micron water vapor imaging. NPOESS has a requirement to measure the water vapor in the atmosphere and the current system will not meet this requirement. The successful launch and operation of the MODIS instrument on the NASA Terra and Aqua satellites demonstrated the significant benefits of an image of the water vapor made at 6.7 microns. Looking at motion of water vapor masses over the north and south poles as the satellites fly over every 45 - 60 minutes has allowed physical measurements of wind speed and direction. Experiments by the European Center for Midrange Weather Forecasting, the Canadian Met Bureau, the Japanese Meteorological Agency and NOAA have shown major benefit in the 5-7 day forecast. Both Terra and Aqua are predicted to end by CY 2007. Modifying the VIIRS imager and providing the required algorithms can add this capability to NPOESS C3 - C6. This will provide this measurement approximately every 30 minutes.
- NPOESS Network Security (DoD 8500). DoD has recently published new network security standards. The new standards require the highest security protection at all interfaces (including internal interfaces). The implementation of these requirements on NPOESS will improve data security and put the program on firm footing to meet more stringent future civil standards. This is the NOAA 50% share.

- GOES Government Program Office. Due to an oversight, FY10 funding was excluded last year. FY10 funding of $12.3 million will support the government program office for the GOES I-P satellite acquisition. This is a technical adjustment for FY10.
- Synthetic Aperture Radar Satellite Support. There are a number of NPOESS requirements that cannot be met because the NPOESS sensors cannot measure the required physical parameter. Examples are ice edge/location at night or under bad weather, soil moisture at depths of > 1mm, etc.
- NASA is developing a single-channel synthetic aperture radar (SAR) for a free flyer satellite with a 2010 launch. This satellite is intended as a research tool and has limited capability to collect images over areas of interest to NOAA. By investing in upgrades to the bus power system and the SAR and increasing the data handling capability of the NPOESS Safety Net, NOAA will be able to increase the amount of data collected by a factor of 5 (10 min/orbit to 48 min/orbit).
- GOES R Series P3I. GOES R Series Acquisition Pre-Planned Product Improvements (P3I), represent upgrades to the baseline GOES R program to meet validated requirements in the GOES R Series Program Requirements Document (GPRD). P3I requirements were identified by users as planned upgrades to meet validated requirements that either were not achievable within the technical, cost, and schedule constraints of the initial GOES R deployment or were evolutionary in nature to meet the expected future requirements as the GOES R Series matured. The solution to meeting these requirements is to work with partners to procure additional instruments, communication packages, and observation platforms (satellites) to obtain and distribute these observations. In addition, appropriate ground systems are needed to command the satellites, process data, and facilitate information distribution and stewardship (archive and access). While specific orbital solutions can still be optimized, other alternatives such as using other satellite resources or other observing platforms are not considered viable alternatives at this time.

NOAAA Mission Support Gap Analysis

NOAA has developed a 48 page Gap Analysis as of September 2004 that addresses each of the principles, and design requirements associated with the Target Architecture. Most significant gaps are:

- Current Transport Architecture consists of over a dozen networks with diverse topologies and underlying “layer 2” protocols.
- Multiple uncoordinated access to major locations
- Segmented network management capabilities. No overview of the overall enterprise
- Governance is coordinated across the agency, but there is not a reliable uniform model to assure consistency or quality.
- NOAA does not have a business support system capable of maintaining the architecture, performing cost allocation or performance assurance.

6.1.3. Bureau of Census Gap Analysis

Table 19 – Bureau of Census Gap Analysis

Gap #	Identified Gap (In Which Architecture)	Target State	Migration Initiatives
#1	Current "federated" EA should become an "integrated" EA (Business Architecture)	Integrated Enterprise Architecture across all Directorates that optimizes planning and investment processes, identifies redundant elements, realizes cost-savings, and improves cross-enterprise communications	1. Mature the EA 2. Create an Enterprise Transition Plan 3. EA Governance
#2	Project management and performance measurement processes are localized and inconsistent. (Business Architecture)	Consistently enforced project management and performance measurement processes across the enterprise.	4. Continue Census Software Process Improvement (CSPI) program advances
#3	By 2010 45% of Census Bureau staff will be eligible for early or regular retirement from government service and their business and technical knowledge may be lost. (Business Architecture)	High quality and motivated work force	5. Develop a succession management plan to attract, hire, develop, and retain a diverse pool of human resource talents.[1] 6. Lead and manage workers and contractors to maximize results and to minimize the number of decision layers.[2]
#4	The Census Bureau's growing dependence on administrative records in its surveys, censuses, and modeling activities will be tested by relationship changes with administrative agencies.[3] (Information Architecture)	Continuing and expanded access to administrative records	7. Monitor changes in legislation, budget cutting, audits, and privacy concerns for impact upon ready access to administrative records.
#5	Current privacy, confidentiality, and data stewardship practices are not always consistent with new Privacy Principles proposed by Privacy Policy and Research Committee.[4] (Information Architecture)	Cross-enterprise adherence to Privacy Principles	8. Plan resolution of inconsistencies among new Privacy Principles, existing policies, and Census current practice. (In progress) 9. Implement structured tool to help program areas complete initial Data Stewardship/ Privacy Impact Assessment (In progress) 10. Identify subsets of PIA assessment questions that are appropriate for each stage of a

[1] Census Bureau Strategic Plan. Objective 5.1. p. 11
[2] Census Bureau Strategic Plan. Objective 5.1. p. 11
[3] Census Bureau Strategic Plan Appendix 3 p. 15
[4] Census Bureau Privacy Principles. p. 2.

Gap #	Identified Gap (In Which Architecture)	Target State	Migration Initiatives
			project's development lifecycle 11. Integrate PIA tool usage into Census Bureau's standard software development and project management practices
#6	As concerns grow about threats to privacy of information in the Internet age, about confidentiality of information provided to the government, and about intrusiveness of government programs, the Census Bureau faces challenges to collecting personal and sensitive information in its surveys and censuses.[5] (Information Architecture)	Public trust and cooperation with Census Bureau's survey and census efforts (Strategic Objective 4.2) [6]	12. Assess confidentiality and privacy aspects of data collection and dissemination methodologies and the use of administrative information to ensure continued protection of individual privacy.[7] 13. Assess possible disclosure risks in data products and, as necessary, develop methodologies and/or propose legislation to address concerns.[8] 14. Establish a Census Bureau-wide privacy and confidentiality program to fully integrate privacy and confidentiality policies and practices across all programs and to recommend and develop a comprehensive research agenda to support the Census Bureau's commitment to privacy and confidentiality.[9]
#7	When and how to address security for all COTS product acquisitions, custom application developments, or legacy system modifications is applied inconsistently.[10] (Service Component/Application Architecture)	IT security integrated into the purchase, development, and use of all software used within the Census Bureau	15. Assess current state of security affecting Census Bureau software 16. Identify corrective steps to ensure minimum security level 17. Implement corrective software security actions
#8	The Census Bureau has a varied and diverse customer base that ranges from the U.S. Congress to the local data user in search of information for his or her neighborhood or block. The challenge is to develop cost-effective strategies for the	Census Bureau information is readily available to everyone, from the least to the most experienced data user	18. Develop a Census Bureau-wide approach for enhancing the usefulness and accessibility of products, services, and methods of dissemination. The primary means is to make Census Bureau information available through an integrated,

[5] Census Bureau Strategic Plan. Challenges. pp. 2-3.
[6] Census Bureau Strategic Plan. Objective 4.2. p. 9.
[7] Census Bureau Strategic Plan. Objective 4.2. p. 9.
[8] Census Bureau Strategic Plan. Objective 4.2. p. 9.
[9] Census Bureau Strategic Plan. Objective 4.2. p. 9.
[10] An Enterprise IT Vision for the Census Bureau.. Objective 1.3. p. 35

Gap #	Identified Gap (In Which Architecture)	Target State	Migration Initiatives
	continued delivery of useful information to this diverse customer base. [11] (Service Component/Application Architecture)		electronic dissemination vehicle, American FactFinder. [12] 19. Support and promote widespread use of Census Bureau products in multiple media, using the Internet for its immediacy, ability to be customized, and breadth of reach, while also taking advantage of the strengths of other media for specific products and customers. [13] 20. Produce crosscutting information and reference products such as the Statistical Abstract of the United States, County and City Data Book, State and Metropolitan Area Data Book, and the online Product Catalog. [14] 21. Develop a comprehensive research plan to monitor the product and dissemination needs of users and potential users. [15] 22. Inform and educate stakeholders, customers, and respondents on how to access and use Census Bureau products. [16] 23. Build on the Census Bureau's reputation through a coordinated, Bureau-wide program to ensure that the U.S. Census Bureau name is associated in a consistent manner for all products and activities. [17]
#9	Current computing is performed on numerous varieties of hardware, software, networking, storage and communications equipment at varying levels of systems releases, patches,	Consolidated technology assets under the IT directorate	24. Accelerate the infrastructure consolidation 25. Centrally manage all Census Bureau IT systems 26. Transfer infrastructure support personnel to IT 27. Realign the Census Bureau's

[11] Census Bureau Strategic Plan. Challenges. pp. 2-3.
[12] Census Bureau Strategic Plan. Objective 4.6. p. 10.
[13] Census Bureau Strategic Plan. Objective 4.6. p. 10.
[14] Census Bureau Strategic Plan. Objective 4.6. p. 10.
[15] Census Bureau Strategic Plan. Objective 4.6. p. 10.
[16] Census Bureau Strategic Plan. Objective 4.6. p. 10.
[17] Census Bureau Strategic Plan. Objective 4.6. p. 10.

Gap #	Identified Gap (In Which Architecture)	Target State	Migration Initiatives
	and security updates (Infrastructure Architecture)		technology budget 28. Upgrade the IT staff
#10	Directorates, individual business units, or an individual can elect to not follow a technology standard or policy (Infrastructure Architecture)	Implemented and enforced technology standards and policies	29. Expand IT standards and policies
#11	Current federated operations model increases the overall Census Bureau cost of delivering IT services and does not provide a consistent level of services to all Bureau Program Areas (Infrastructure Architecture)	An implemented IT utility services model	30. Implement an IT Utility Services model 31. Establish an IT Services catalog 32. Establish an IT Services management environment
#12	Census Bureau Program Areas have investigated and adopted differing levels of technology best practices (Infrastructure Architecture)	Consistently implemented set of industry best practices in the key technology areas of selection, procurement, development, use and lifecycle management	33. Identify and implement IT best practices
#13	Lines of authority are not always consistent with federally and departmentally defined CIO responsibilities and accountability. (Infrastructure Architecture)	Revamped technology governance and administration structure and processes	34. Improve the IT governance structure 35. Centralize IT procurement
#14	Evolving telecommuting solutions and the need to ensure confidentiality currently limit the Census Bureau telecommuting opportunities (Infrastructure Architecture)	Telecommuting is common practice	36. Improve electronic communication capabilities to permit information sharing and capacity to transfer work projects between desktop and offsite work site 37. Improve security of all aspects of the telecommuting environment 38. Continue to test telecommuting options.[18]
#15	As technological capabilities increase, customers will expect easier access, quicker turnaround, and greater comparability among different data sets. Respondents want easier-to-use questionnaires. As the Census Bureau adopts more computer-assisted technologies, the challenge will be to maintain business,	New technologies improve Census Bureau services and products	39. Identify effective uses of automation and telecommunications to integrate core processes of data collection, capture, processing, and dissemination.[20] 40. Identify, adapt, and promote improved statistical methodologies.[21]

[18] Census Bureau Strategic Plan. Objective 5.1. p. 11

Gap #	Identified Gap (In Which Architecture)	Target State	Migration Initiatives
	respondent, and customer confidence in the reliability, security, and integrity of e-business and other electronic collections and transactions. [19] (Infrastructure Architecture)		
#16	As a result of the various GAO, DOC, and ITSO audits conducted in FY 2004, it was determined that while efficient from a management and reporting perspective, the current IT security and IT planning system documents do not lend themselves to meeting the requirements of 1) system certification and accreditation, 2) portfolio oversight and management, and 3) budget development. Based on this, the IT Security, Planning, and Enterprise Architecture offices determined that the current definitions of IT systems needed to be updated and the documentation supporting each system needed to be modified accordingly.[22] (Infrastructure Architecture)	Re-defined boundaries of IT systems that facilitate security certification and accreditation, portfolio oversight and management, and budget development.	41. In FY 2005, each new IT system will have a security plan, risk assessment, FISMA assessment, disaster recovery plan, and business plan associated with it and will be divided into one of the following IT portfolios: Data Gathering Systems, Data Analysis Systems, Data Dissemination Systems, Administrative Support Systems, and Consolidated IT Systems. [23] 42. Also in FY 2005,the various Census Bureau IT systems will be re-defined and the documentation supporting each system will be re-written. The current 11 IT security systems and approximately 50 ITBPs will be de-commissioned and new business plans developed for each newly defined IT system. [24]

6.1.4. BEA Gap Analysis

Table 20 summarizes the Bureau's application layer/view gap analysis

[19] Census Bureau Strategic Plan. Challenges. pp. 2-3.
[20] Census Bureau Strategic Plan. Objective 4.2. p. 10
[21] Census Bureau Strategic Plan. Objective 4.2. p. 10
[22] Census Bureau. Operational IT Plan
[23] Census Bureau. Operational IT Plan
[24] Census Bureau. Operational IT Plan

Target	In	Partial Implementation	Pilot	No Implementation
COTS standards				
Operating System	X			
Productivity Software		X		
Software Development Lifecycle Methodology				
Current/Updated SDLC methodology	X			
SDLC/Best Practices Followed		X		
Application Modernization				
Systems Continuously Re-engineered		X		
System technology/platform upgraded to be in line with the current TRM Standard	X			
IT managers are trained in and apply a project management framework.		X		

6.1.5. ESA Gap Analysis

Migrating to Windows 2000 server and Windows XP client operating systems will be an on-going software deployment project. Significant planning, testing and re-configuration of the network will be required to rollout a truly effective upgrade. A project roadmap and a methodology for deployment will be essential to prevent disruptions to users and to avoid significant downtime or loss of business-critical systems.

The OCIO IT staff faces a multitude of factors to consider before deployment, i.e., the needs and priorities of each account on STAT-USA, the implementation of timescales, financial budget constraints and the degree of risk associated with upgrading legacy applications. ESA will need to follow the framework and documentation it has developed to ensure a thorough and consistent approach to migrate the existing network server and client platforms to the next level.
Items identified as possible obstacles to ESA's migration strategies are as follows:

- Workstations that cannot be replaced due to specialized software that does not work on Windows XP.
- Software and hardware needs to be tested for operation in XP prior to upgrades.
- Pending hardware upgrades. Hardware such as RAM and hard drive space may be too small to handle full upgrade
- As the Operating System (OS) Product Life Cycle continues to force to upgrade, ESA must upgrade with the technology to implement new features and functionality throughout the organization. Microsoft has released Windows 2000 Server and Advanced Server products introducing a major new component - The Active Directory. With this introduction, most organizations will be compelled to integrate this functionality due to the security requirements of their current implementation, the decreasing support that is available for Windows NT4, or to integrate with other organizations that have already

migrated to this new environment. The OCIO staff will need to take a snapshot of our current environment and use that as the basis for the migration plan. Each OU will need to be able to see and participate in the design process for the new environment, including OS integration and Active Directory implementation.

- Incorporate legacy software such as: Web CIMS and Boats and HRDS and OLIS NET.
- Identify project roles and teams
- Create and maintain detailed documentation of the current computing environment
- Establish a test lab environment and to verify migration plan scalability
- Define education/training strategy including Notes and Microsoft training.

6.1.6. MBDA Gap Analysis

See section 6.8, the gap analysis and migration plan are combined in a single table.

6.1.7. NIST Gap Analysis

NIST Shared Scientific Systems currently include the web based calibration tool, the Scientific SANS, and the High Performance Computing (HPC) environments.

The HPC environment in Gaithersburg is centralized in the OCIO and supports various scientific systems and components including the Scientific SANS. The NIST Boulder campus has a less centralized and smaller scale environment to support the NIST Time System and other limited research. The HPC provides high-speed bulk computer processing (Mainframe, Single Servers and Clustered Arrays) for scientific modeling, virtual experiments and bulk data processing. OCIO also supplies High Speed networking and integrated Scientific Storage Area Network Applications to the OUs for scientific access.

The ISSC calibration tool offers workflow control and tracking for scientific calibration processes across multiple OUs. The system was originally developed by the Electronics and Engineering Laboratory (EEEL) for internal use, and over time has been adopted by other OUs within NIST. In addition to supporting scientific calibration, ISSC is also used by the Office of the CFO to generate invoices to customers using OSSC services.

Boulder maintains several scientific networks and systems, including the NIST Time System. The NIST Time System consists of a several servers that securely access the Atomic clock at Boulder. This system is considered essential to NIST's mission and the scientific community as a whole.

In general, better-centralized control of these shared scientific systems needs to be established. While coordination and support of these applications are adequate, better control would facilitate consistent support of these systems.

6.2. DOC Migration Plan

The migration plan for the DOC EITA is based in large part on funding and opportunities to make significant changes. It is generally not cost-effective to alter existing systems to conform to a new paradigm until the system has reached end-of-life, is scheduled for a major upgrade

anyway, or business needs change beyond the capability of the existing system. This means that existing systems will be "grand fathered" in as funding allows. It will also mean that any system undergoing significant renovation or replacement will have to be in compliance with the DOC EITA plan, and the accompanying Technical Reference Model and Standards Profile.

The following sections discuss current or planned projects that comply with the aforementioned documents and move DOC toward achieving the target architecture. The migration plan is based on the Federated Architecture concept as describe previously, and therefore some of the initiatives are specific to a particular operating unit, others are DOC-wide initiatives. The operating unit specific initiatives discussed below are only those highlighted as examples of major IT initiatives; the full plan for each operating unit is contained within each operating unit's specific architecture. For all the initiatives noted below see the relevant Exhibit 300, "Capital Asset Plan and Business Case" for specific information on schedules, costs, and other migration issues.

6.2.1. Commerce Administrative Systems

There are several initiatives currently underway for the Administrative systems segment.

A DOC-wide Time and Attendance system is currently being implemented. It is a Web based application called webTA from 3i Systems. It provides full Time & Attendance functionality for all employees, regardless of their location. Since it is a Web based application, it requires no software installation on the client (user) system, dramatically reducing operational cost. It uses a standard compliant SQL database to store the data and has the capability to transmit the completed data to the National Finance Center for processing. The system also has a workflow component that automatically forwards completed time sheets and leave requests to the approving manager or designee for confirmation and approval.

A real time interface between the Commerce Standard Acquisition and Reporting System (CSTARS) and CAMS is under development. This interface provides transaction level integration between the two systems utilizing an Enterprise Application Integration tool from Tibco called BusinessWorks. This tool is based on Sun Microsystems' Java standards and on the XML standards identified in the DOC TRM. It works by translating data from one system to a common XML format, and then uses the Java JMS messaging system to route the data and transaction information to the target system where the data is translated to that systems specific format and processed as if it were a native transaction. This approach allows for the eventual integration of all administrative systems through a common shared service and provides a foundation for developing an Executive Information System in that it will be the mechanism to provide access to all data regardless of its source.

Line of Business Subfunction	Initiative	Actions	Milestones
Web Site Management	Integrated Content Management	Complete pilot deployment of Stellant	9/05
		Develop interfaces to content sources	TBD
Communications	Integrated Directory Services with established hierarchy	Define capabilities of existing systems	11/05

	and automatic updates		
		Develop and establish coordination across all of DOC	FY07
	DOC-wide coordinated 2-way communications and notifications for all employees	Pilot implementation using phone, email and PA systems	07/05
		Develop plan to role out DOC-wide	
Financial Management	Web-Enabled Applications	Complete feasibility study for re-engineering to n-tier architecture.	6/05
	E-Travel integrated into CBS	Define interchange API	

Supply Chain Management	Web based single point of entry	Design new workflow	TBD
		Construct integrated portal for CBE	TBD
		Reengineer systems to utilize an n-tier architecture	TBD
	Seamless interface to CBS	Implement Tibco pilot interface between CBS & CBE	9/05
Human Resource Management	OMB HR Line of Business	OMB completes LOB implementation plan	TBD
		Identify gaps with current systems & requirements	Dependent on previous step completion
		Define interface to other DOC systems	Dependent on previous step completion
		Web-TA Rollout	01/06

6.2.2. OMB E-Gov and Line of Business Initiatives

As part of the overall E-Gov strategy for the Federal Government, OMB has launched several Line of Business (LOB) initiatives concentrated in the Management of Government Resources business area. These initiatives are designed to consolidate each LOB into a single solution that will be used across the entire Federal Government. DOC is also involved in the Line of Business projects and is reviewing the implications of these on the current Target Architecture. As details of these initiatives become more concrete, the Target will be revised to reflect DOC participation.

Human Resources LoB Initiative

DOC is actively participating in the HR Line of Business initiative and will be considering what alternatives presented by that initiative best serve the needs of DOC. The current business plan and solution architecture have been fully reviewed and comments sent back to OMB and the

managing agencies. Since DOC was already actively engaged in a complete redesign of its current systems when this initiative began, the Departments requirements are well documented and this should facilitate the choice of service providers when the LOB initiative is implemented.

Financial Management LoB Initiative

DOC has reviewed the business plan for the Financial Management LOB and sent comments and concerns to the managing partners. DOC has currently implemented the CAMS system throughout most of the Department and will be reviewing the ramifications, including cost benefit of the proposed LOB project. A key factor for DOC is the level of integration this initiative will provide with other related administrative systems, such as procurement, property management, and budgeting. DOC has well defined target architecture in this area that includes real time integration of all transactional tasks and any alternative plan must include these capabilities.

E-Grants Initiative

DOC is actively participating in the e-Grants initiative for accepting applications for the various grant programs offered through the Department. Providing a single location for all applicants to find and file for all of the various programs has a great benefit for the end-user as well as significantly reducing the cost in providing the capability.

E-Travel Initiative

The E-Travel initiative provides the end-user the ability to make reservations through a government-wide system. This system uses a Web-based interface tied to a centralized system and reduces the cost of making reservations significantly. DOC is currently in the implementation planning for this initiative and will migrate to this new system in phases over the next year.

6.2.3. Operating Unit Major Modernization Efforts

Each operating unit within DOC maintains its own EA in regard to operating unit specific programs. The following section discusses some of the major initiatives underway in the various operating units within DOC.

Bureau of the Census

21st Century Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Enhancements

The 21st Century MAF/TIGER Enhancement program will be a major improvement to the quality and accuracy of the Census Bureau's digital geographic data, which is used by census takers throughout the U.S. as well as other state, local, and tribal Government entities and numerous academic institutions throughout the U.S. The MAF/TIGER Enhancement program is an example of the Department's strategic thrust to redesign its business processes through the application of leading-edge digital technologies. Planning for the 21st Century MAF/TIGER adheres to Commerce's architecture and security guidelines, including those relating to accessibility (Section 508) and the Government Paperwork Elimination Act. The plan is

supported by a comprehensive cost-benefit analysis and well-documented project management cost, schedule, and performance measurement baselines

The current Master Address File (MAF) is a complete and current list of all addresses and locations where people live or work, covering an estimated 115 million residences, as well as 60 million businesses and other structures in the U.S. The Topologically Integrated Geographic Encoding and Referencing (TIGER) portion of the project is a digital database that identifies the type, location, and name of streets, rivers, railroads, and other geographic features, and geospatially defines their relationships to each other, to the MAF addresses, and to numerous other entities. The Census Bureau's Geography Division maintains the two databases internally in the Department.

The proposed improvements to MAF/TIGER will allow the Census Bureau's data collection operations to adopt an integrated collection and update methodology for address lists and geographic data required for the 2010 Census, the American Community Survey (ACS), and household surveys. Additionally, the MAF/TIGER Enhancement program will allow for two-way sharing of high-quality address and geographic data with state, local, and tribal Governments as well as academic institutions throughout the U.S., and will allow the Census Bureau to provide the highest possible quality in the geographic products and services provided to its many statistical-data customers. A modern processing environment will allow the Census Bureau to use COTS products and Geographic Information Systems (GIS) tools to make significant performance improvements in existing processing systems.

National Oceanic and Atmospheric Administration

High Performance Computing Center (HPC)

NOAA operates and manages HPC resources associated with three separate organizations: the Geophysical Fluid Dynamics Laboratory (GFDL) located in Princeton, N.J., the Forecast Systems Laboratory (FSL) located in Boulder, CO., and the National Centers for Environmental Predictions (NCEP) located in Camp Springs, MD. GFDL produces timely and reliable knowledge and assessments on natural climate variability and anthropogenic changes in the development of various earth system models. FSL conducts applied meteorological research and development to improve observing technology and create short-term weather forecast and warning systems. NCEP develops models and delivers national and global analyses, guidance, forecasts, and warnings of weather, water, and climate phenomena to its partners and external user communities. Historically, the three organizations have independently procured, operated, and managed their HPC resources in a stove-piped manner.

The full utilization of HPC assets with NOAA became a priority as funding for new equipment became dependent on a NOAA-wide approach to managing its resources. In order to accomplish this, several changes were required.

These included a change in the overall NOAA culture, leading all offices and programs to take a "corporate view," encouragement from the Department to approach HPC differently, growing requirements and tight budgets, recognition of lost opportunities to collectively use HPC resources to realize NOAA's objectives, and a need to accelerate the transition of programs from research to operations.

In order to implement the needed changes to the HPC program the following four strategic objectives were adopted.

Develop a NOAA-wide approach for managing HPC requirements. - NOAA's agency-wide planning, programming, budgeting, and execution (PPBES) will be used to develop, prioritize, and fund mission requirements. Mission requirements will drive technical requirements. Technical requirements are assessed and solutions developed by the new HPC integrated management approach.

Migrate from an organizational based HPC architecture to a function-based architecture. – NOAA has three core functional requirements: operations (which includes backup), operational development (includes operational test bed for pre-operational software engineering), and applied research & development (R&D) (includes development test bed to test code against standards, e.g., interoperability). These three requirements drive two architectures, one for operations, operational development and backup and the other for applied R&D.

Base acquisitions on functional needs rather than organizational needs. – The acquisitions will be based on the architectures: one Request For Proposal (RFP) for NOAA applied R&D and another RFP for operations. The R&D acquisition will include both the National Weather Service and Office of Oceanic and Atmospheric Research, will provide for a potential phased delivery, and include an option to support operations. The operations acquisition will include the full suite of operational requirements, including backup, and an operational test bed. It will also include an option to support applied R&D. The relationships and timeframes for these acquisitions are depicted in Figure 1.

Implement an integrated approach for managing the HPC program. – Management of the HPC program will be integrated into the NOAA Office of the Chief Information Officer and supported by a NOAA-wide HPC board. Integrated management includes planning, establishing, and overseeing implementation of HPC principles and policies, architecture, acquisitions, and performance measures. This approach is consistent with NOAA business and program models and federal government high end computing best practices.

Some of the benefits that NOAA will realize as a direct result of these changes in the HPC program include:

- More effective and efficient use of HPC resources
- Streamlined acquisitions
- Strategic decision making
- Faster transition of research to operations.

Standardization of some components is required for full interoperability. The achievement of platform independence is a major architectural goal for DOC, and this initiative is a clear step in that direction. Additionally, the reuse of IT assets, or the full utilization of those assets, is a key goal for DOC.

CLASS System

Many operating units within NOAA gather, process, and store large environmental data sets, providing access to the data to researchers within NOAA as well as the public and private

sectors. The CLASS project is a combined process to both reengineer legacy data storage and access systems and blend new and efficient technologies to ensure the stewardship of existing data as well as provide for new and even larger data sets from more sophisticated monitoring systems. It will consolidate all of the storage, archiving and user access into a single system that will reduce the overall cost to NOAA, provide better more timely access to the data, and provide for the planned deployment of infrastructure in anticipation of future needs.

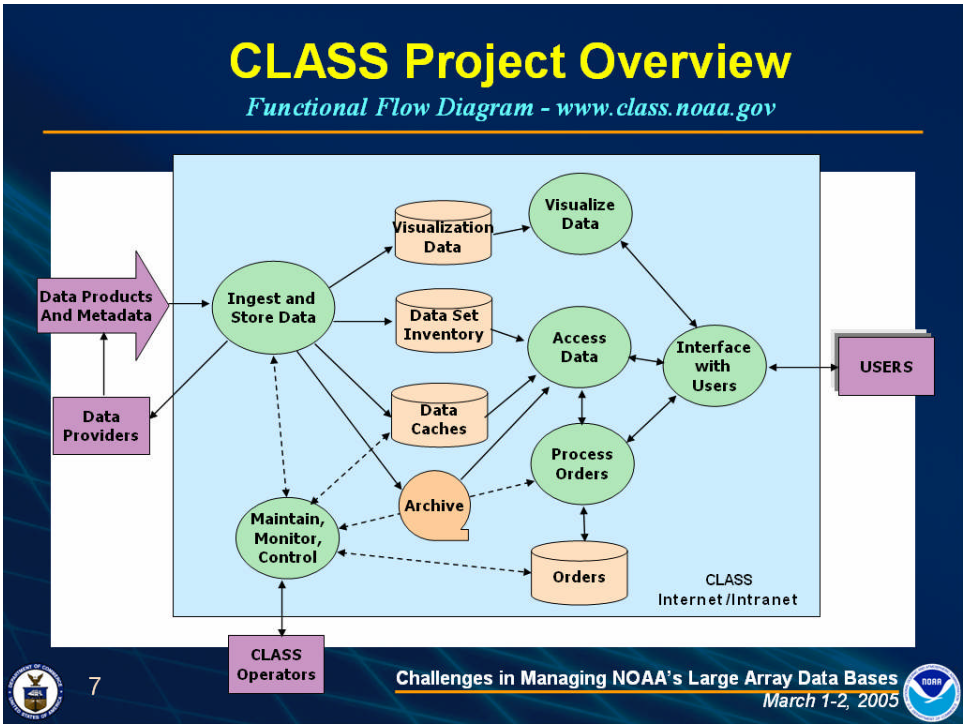


Figure 23 CLASS Concept

United State Patent and Trademark Office

Patent E-Gov

The workload of the United States Patent and Trademark Office (USPTO) has grown to the point that it can no longer be managed effectively in the existing paper-based environment. The Patent E-gov initiative includes electronic receipt, processing, reporting, and publication. This will enable the USPTO to migrate to a more efficient operating environment that supports the business goal of providing quality services and products in a timely manner to customers and stakeholders.

The increased use of automation contributes directly to Commerce's IT Management Goal of "using IT and electronic means to improve the delivery of Commerce programs and services". Patent E-gov supports the President's Management Agenda item, "Expanded Electronic Government," by promoting the sharing of information more quickly and conveniently with the public, businesses, and other intellectual property offices. In addition, Patent E-gov supports the strategic goal of a citizen-centric electronic Government by creating a fully electronic patent process that will not only reduce costs, but also help the USPTO to meet the high public demand for patent information and allow more efficient communication with the public and other USPTO customers worldwide.

While many E-gov initiatives are multi-agency efforts within the Federal Government, the Patent E-gov project is a global collaboration involving multiple countries and intellectual property organizations. Building on a long-standing arrangement known as the Trilateral Offices (European Patent Office (EPO), Japanese Patent Office (JPO), and USPTO), the USPTO and EPO have agreed to leverage each others systems' capabilities. This will eliminate redundancy through reuse, and will be reinforced by adopting World Intellectual Property Organization (WIPO) standards to ensure global interoperability.

As a first step in its Patent E-gov Strategy, USPTO introduced EPO's ePhoenix system to capture all new applications in image format in FY 2003. The next steps are to deliver an image-based patent application-processing pipeline by the end of FY 2004 and a text-based pipeline by the end of FY 2006 (based on file eXtensible Markup Language (XML)). Development will continue to deliver automated formalities review, amendment processing, and appeals processing by FY 2008. At that point, the USPTO will have eliminated most current manual functions and enhanced those that still exist with a fully electronic patent processing system.

6.3. ITA Migration Plan

Table 20 below identifies the migration projects currently planned or in the case of multi-year – in progress. The project type is identified along with the current phase in which the project finds itself

Table 20 – ITA Migration Plan

Project	Type	Phases [current phase in bold]	Status
Customer Relationship Management (CRM)	(BUS)	Requirements Design **Request for Proposal** Pilot Phase Production Operations	Request for Proposal Issued Data design complete. Start Date: May 2004 Stop Date: June 2010
Content Management System (CMS)	(BUS)	Requirements Design Product Evaluation **Pilot Phase** Production Operations	Export.gov pilot completed successfully. Pilot of TIC website integration in progress. Start Date: October 2004 Stop Date: September 2009
DOC Learning Management System (LMS)	(BUS)	Requirements Design Product Evaluation **Pilot Phase** Production Operations	ITA beginning to use the DOC LMS in pilot mode. (Green) Start Date: October 2004 Stop Date: September 2009
Knowledge Management (KM)	(BUS)	Requirements Design Request for Proposal Pilot Phase Implementation **Operations**	Pilot completed successfully. Production rollout 95% complete. (Green) Start Date: May 2003 Stop Date: August 2005
Activity-	(BUS)	**Requirements**	Requirements phase completed. Project

Project	Type	Phases [current phase in bold]	Status
based Costing (ABC)		Design Request for Proposal Pilot Phase Implementation Operations	on hold pending discussions with DOC on CBS (Yellow) Start Date: April 2004 Stop Date: TBD; Project on hold
E-Authenticatio n (EAU)	(BUS)	**Requirements** Design Request for Proposal Pilot Phase Production Operations	Requirements phase to begin in FY2005. (Green) Start Date: Summer 2005 Stop Date: TBD
Data Analytics and Management (DAM)	(BUS)	**Business Case** Requirements Design Request for Proposal Pilot Phase Implementation Operations	Business Case in development. Requirements phase to start after completion of pilot phases of wCMS and CRM. (Yellow) Start Date: January 2007 Stop Date: TBD
Industry Code Standardizati on (ICS)	(BUS)	**Business Case** Requirements Design Request for Proposal Pilot Phase Implementation Operations	Business case underway; Requirements to be addressed in the context of CRM implementation. (Yellow) Start Date: December 2004 Stop Date: October 2005
Domestic Network Upgrade (DNU)	(SUS)	Requirements Design Request for Proposal Pilot Phase Implementation **Operations**	Implementation completed. (Green) Start Date: December 2003 Stop Date: November 2004
International Network Upgrade (INU)	(SUS)	Requirements Design Request for Proposal Pilot Phase **Implementation** **Operations**	Implementation of international bandwidth and network upgrades are ongoing depending on country/regional availability to infrastructure. The majority of ITA's overseas sites are in a steady operational state. (Green) Start Date: June 2003 Stop Date: Ongoing
Single E-Mail (SEM)	(SUS)	Requirements Design Request for Proposal **Pilot Phase** Implementation Operations	Pilot conversion of current Groupwise email users to Lotus Notes is underway. Completion of this migration for all ITA users expected by the end of FY2005. (Green). Start Date: June 2004

Project	Type	Phases [current phase in bold]	Status
			Stop Date: September 2005
Continuity of Operations Plan (COOP)	(SUS)	Requirements **Design** Request for Proposal Pilot Phase Implementation Operations	Design phase. (Green). Start Date: April 2002 Stop Date: Ongoing
Disaster Recovery Plan (DIS)	(SUS)	Requirements Design Request for Proposal **Pilot Phase** Implementation Operations	Pilot phase. (Green). Start Date: April 2004 Stop Date: Ongoing
Web Consolidation (WEB)	(SUS)	Requirements **Design** Request for Proposal Pilot Phase Implementation Operations	ITA's web consolidation project is in design mode under the guidance of a newly formed ITA web Governance Group. The recently acquired web Content Management System will eventually be used to manage web content for all ITA websites. (Green). Start Date: January 2005 Stop Date: TBD
Secure Remote Access (SEC)	(SUS)	Requirements Design Request for Proposal Pilot Phase **Implementation** **Operations**	Project is complete for ITA Headquarters and is in operational mode. Implementation is in progress for ITA's domestic and international fields. (Green) Start Date: July 2003 Stop Date: December 2005
Worldwide W2K Network Consolidation (WNC)	(SUS)	Requirements Design Request for Proposal Pilot Phase Implementation **Operations**	Operations phase. (Green) Start Date: September 2002 Stop Date: December 2003
IT Operations Improvement (ITO)	(SUS)	Requirements Design Request for Proposal Pilot Phase **Implementation** Operations	Implementing 4 ITIL processes – Incident Management, Service Desk, Change Management and Configuration Management. (Green). Start Date: January 2004 Stop Date: TBD
Improved User Support for International Field (IUS)	(SUS)	Business Case **Requirements** Design Request for Proposal Pilot Phase	Requirements are being addressed in a solicitation for User Support services. (Green) Start Date: December 2004

Project	Type	Phases [current phase in bold]	Status
		Implementation Operations	Stop Date: December 2005
Digital Signature (DIG)	(R&D)	**Business Case** Requirements Design Request for Proposal Pilot Phase Implementation Operations	Business case planned. (Green). Start Date: June 2006 Stop Date: TBD
Enterprise Architecture (EA)	(MAN)	Business View Application View Information View Technology View Migration Plan **Governance**	Governance phase in progress. (Green.) Start Date: June 2003 Stop Date: TBD

6.4. NOAA Migration Plan

NOAA Ecosystems Migration Plan

Table 21 – NOAA Ecosystems Migration Plan

Migration Plan	Cost ($M)	Reference
Plan Characterize and Assess Nearshore Areas	2.77	https://www.ppbs.noaa.gov/PDFs/ecosystem/habitat.pdf)
Restore 200 acres of Habitat	4	https://www.ppbs.noaa.gov/PDFs/ecosystem/habitat.pdf
Increase Legal-Enforcement investigations, patrol and outreach	TBD	https://www.ppbs.noaa.gov/PDFs/ecosystem/enforcement.pdf
Draft Regulations to govern offshore aquaculture	2.2	https://www.ppbs.noaa.gov/PDFs/ecosystem/aquaculture.pdf
Obtain improved information to support more informative and precise assessments	TBD	https://www.ppbs.noaa.gov/PDFs/ecosystem/eco%20obs.pdf
Local coral reef conservation and management	1.5	https://www.ppbs.noaa.gov/PDFs/ecosystem/corals.pdf
Deep Sea coral Observations	1.5	https://www.ppbs.noaa.gov/PDFs/ecosystem/corals.pdf
Clean Water Act consultations	6.9	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Marine mammal ands sea turtle recovery	3.2	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Reduce sea turtle and mammal bycatch and interactions with fishing gear	3	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Partnership to implement agreements with Alaska natives	2	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Improve stranding response	1.5	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Permitting for additional 4(d) rule approvals and incidental take requests	.5	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
International Sea turtle conservation	1	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf

Education regarding N. Atlantic Right Whale	.25	https://www.ppbs.noaa.gov/PDFs/ecosystem/prospp.pdf
Research to characterize and understand causes and effects of ecosystem condition	3.5 and 6.0	https://www.ppbs.noaa.gov/PDFs/ecosystem/eco%20res.pdf
Models to forecast Ecosystem changes	4.9	https://www.ppbs.noaa.gov/PDFs/ecosystem/eco%20res.pdf
Extending science-based information to targeted constituencies	1.2	https://www.ppbs.noaa.gov/PDFs/ecosystem/eco%20res.pdf
Regulation Analysis Evaluation and Implementation	1.2 and 1.9	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf
International Coordination and Cooperation	5.1	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf
Implement Shrimp Business Plan	2.0	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf
Implement E-Government	1.5	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf
Outreach and Education	1.0	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf
Develop Fisheries Management Plans	1.812	https://www.ppbs.noaa.gov/PDFs/ecosystem/fishman.pdf

NOAA Climate Migration Plan

NOAA's the FY 06 Annual Guidance Memorandum (AGM) describes seven future directions in Section 2:

- Take the pulse of the planet
- Advance toward an ecosystem orientation
- Expand climate services
- Improve water resource management
- Facilitate intermodal transportation
- Sustain important national NOAA programs
- Help the global community

Proposed migration changes for FY 2006 as directed by the AGM include:

Modify "Take the pulse of the planet" to enhance efforts to integrate observations, data management and analysis in order to ensure a system approach to observational capabilities and the ability to provide relevant environmental information to society. This helps us address the broader mandates of the US Climate Change Research Program as well as the Global Earth Observation System of Systems.

- Change "Improve water resource management" to incorporate the broader issues of water resources and drought in order to address the Western Governor's endorsement of NOAA lead on National Integrated Drought Information System.
- Modify "Sustain important national NOAA programs" to address more general improvement of Decision Support by making NOAA services and products more useable and understandable. In this context we recommend a theme concerning the development of an integrated regional approach to NOAA environmental products and services, a "one-stop shop" for NOAA information in a region. From Climate perspective, regions such as Pacific Islands, Alaska, California or Gulf of Mexico would benefit from this

approach (See suggestions for Alaska and Pacific in II.4 and II.5, above). Also, add in an evaluation function to provide interaction with stakeholders for improving products and services.
- Modify "Help the global community" to develop more effective relationships with NOAA partners to enhance our capabilities for research, stakeholder interaction, and delivery of products and services to policy and decision makers.

Proposed migrations for FY 2007 as directed by the Annual Guidance Memorandum (AGM) include:
- Advance the accessibility and computational power of NOAA's modeling efforts and utilization of the developing Earth System modeling capability for new product suites in Ecosystems, Climate, and Weather and Water. A shortage of computation power is a key gap in the Climate Program element 3 on predictions and projections for improving the skill of existing products, developing new products, and facilitating the transition of research into operations.
- Promote environmental literacy as a tool to accomplish NOAA's goals. Improving public literacy on climate is a desired outcome of the Climate Program.[1, 10]

NOAA Weather and Water Migration Plan

Key Improvements
- Weather Information
- Water Resource Predictions
- Air Quality
- Coasts, Estuaries, and Oceans
- Integrated Observations
- Environmental Modeling

Weather Information

Sustain on-going improvements:

Strengthen Critical Warning and Forecast Services
- Improve observations and science
- Improve forecast techniques
- Improve space weather from data management to product delivery
- Improve employee performance through focused training

Enhance Life Saving Information Delivery:
- Exploit improvements to supporting
- Partner with White House and DHS – NWR regional broadcast & power reliability

Enhance Public Response:
- Sustain 124 NOAA service representatives
- Print preparedness materials (subset), conduct preparedness campaigns, sample customer satisfaction, and support environmental literacy

Address remaining deficiencies through:

Strengthen Critical Warning and Forecast Services:

- Increase winter aircraft observations
- Improve central forecast guidance
- Improve fire weather predictions
- Improve space wx. model transition, data mgmt, product delivery
- Initiate employee continuous learning

Enhance Life Saving Information Delivery

- Make NCEP IT more secure, robust, and agile
- Make NWR a nationally recognized "All-Hazards" system

Enhance Public Response:

- Provide service reps resources to build partnerships
- Develop preparedness materials and improve NOAA/DHS training efforts

Outcomes

- Enhanced Life Saving Information Delivery
  - NWR nationally used as All-Hazards Warning System
    - *Required security, reliability and regional transmissions by FY07*
    - *100% NWR coverage for high risk areas by FY07*
    - *95% NWR coverage in each state by FY08; 23% of transmitters replaced by FY10*
    - Responsive processing and telecommunications supporting field operations
- Strengthened Warning and Forecast Services
  - Improved performance for all forecasts and warnings

	2004		2010
Tornado warning lead time:	12 mins	->	17 mins
Winter storm warning lead time:	15 hrs	->	20 hrs
Reduced Hurricane 48 hr track error:	130 nm	->	123 nm

- Enhanced Public Response—Capabilities to:
  - Increase Storm- & Tsunami-Ready Communities by 160 per year
  - Contact and train 100% of county emergency managers annually
  - Update all preparedness materials printed annually

Water Resource Predictions

Sustain ongoing science improvements:

- Continue deployment of Advanced Hydrologic Prediction Service
- Improve surface and hydrological observations
- Offset: Expand scope of AHPS to water resource information
- Community Hydrologic Prediction System
- Improve water resource data assimilation & modeling
- Initiate Social science studies
- Integrate production and delivery

Outcomes

- NOAA water resource information begins to fill critical holes in National Water Resource Management decision making
  - AHPS fully deployed across 75% of the Nation
    - Multidisciplinary, extramural research community fortifies NOAA's hydrologic science infusion program
    - Data from advanced, multi-sensor observing technology drives operational fresh and salt water forecasting systems
    - NOAA's River Forecast Centers and Coastal Services Centers deliver probabilistic forecasts of water variables in a consistent manner
- NOAA's water resource information supports
  - Water conservation planning
  - Allocation and distribution of water
  - Sustainable irrigation
  - Enhanced aquatic habitats
  - Balanced terrestrial/aquatic watershed management

Air Quality

Sustain ongoing improvements:

- Develop, test, and apply improved models

Address remaining deficiencies through:

- Accelerate deployment of ozone and fine particle forecast capabilities
- Sustain and enhance ongoing AQ research program
  - Complete targeted field observation programs at regional and metropolitan levels (conducted jointly with Climate Program)
  - Complete targeted regional air quality assessments
  - Use results to develop and deploy predictive models for particulate matter and other pollutants

Outcomes

- Operational Air Quality Forecast Capability
    - 24-hour ozone forecasts for the continental U.S. in FY07; nationwide by FY08
    - 24-hour particulate matter forecasts for the northeastern U.S. in FY08
- Regional air quality assessments for four regions, including several metropolitan studies in each region
    - Results can be used by national, regional, and local air quality decision-makers
    - Results also used to develop and refine operational air quality forecast model
- More robust observational basis for required AQ research

Coasts, Estuaries, and Oceans

Establish program focused on improving services along coasts:

- Transfer current coastal operations from LFW & EMP:
    - Buoy and ship observations
    - Tsunami Centers and Mitigation

Sustain ongoing improvements:

- Improve prediction in estuary transition zones
- Improve coastal and ocean remote sensing forecasts
- Enhance coastal & ecosystem models
- Advance coastal, estuary, and ocean science

Address remaining deficiencies with new adjustments:

- Expand and improve CGOOS network of observations
- Improve and expand scope of transition zone predictions
- Improved coastal remote sensing

Outcomes

- Expanded network of coastal, estuarine and ocean observations integrated into NOAA and international capabilities
  - Increase in ocean observations network coverage
- Integrated and improved NOAA products, services, and information for Nation's Coastal zones
  - Coastal weather forecast accuracy approaching inland forecast accuracy
  - New Transition zone (combined fresh & salt) water predictions
  - New products and services addressing combined fresh & salt water, weather, and human impacts on coastal communities
- Integrated delivery of coastal zone environmental information to public and decision makers

<u>Integrated Observation</u>

Sustain ongoing science improvements

- Integrate observational, research, and development capabilities into a new integrated system
  - Weather Information
  - Water Resources
  - Coastal-Estuary-Ocean
  - Environmental Modeling

Address remaining deficiencies through:

- Offset: Reallocate program resources
- Initiate observation integration activity

Outcomes

- Improved observational system performance
  - More accurate, timely and complete observational data when and where needed for all NOAA Mission Goals and Programs
  - Improved coverage of regional and storm scale phenomena
  - Improved coverage of coastal zones
- Improved effectiveness of current/future observational systems
  - Integrated system of observing sensors and platforms
  - Standard observational infrastructure

  - Increased exploitation of non-NOAA data sources
  - Seamless control and operation of observational systems
- Improved operational and business efficiency
  - More disciplined systems acquisition and management
  - Faster, cheaper S&T infusion

Environmental Modeling

Sustain ongoing model improvements:

- Improve accuracy and expand scope of predictions
  - Develop, test and implement new scientific techniques
  - Sustain climate model development
  - Accelerate implementation of coastal and estuarine models
  - Implement air quality forecast model
- Improve modeling infrastructure
  - Fund research and development computing
  - HPCC technology and infrastructure development
- Improve data assimilation and models
- Offset: Reallocate program resources to
- Accelerate advanced data assimilation
- Accelerate expansion of coastal and estuarine prediction capabilities
- Fund development for WRF and NOAA integrated modeling system
- Accelerate improvements in forecast probability description

Outcomes

- Improved environmental predictions supporting all NOAA goals
- More accurate weather, water and air quality predictions
  - Improved data assimilation and exploitation of multi-sensor observations
  - Improved forecast model accuracies – improved resolution, physics, numerics
  - Improved characterization of forecast uncertainty
- More accurate climate predictions and assessments
  - Coupling of biochemical processes
- Improved capabilities and capacities supporting evolving and emerging NOAA missions
  - Complete predictive weather & water coverage of NOAA's coasts, ports, and estuaries
  - Optimal modeling foundation for air quality and intermodal transportation
  - Establish systematic production of ecological forecasts
- Improved IT architecture and partnerships to sustain S&T infusion required to meet growing mission needs in affordable and timely manner
  - Integration of all NOAA environmental models into Earth System Model Framework
  - Expansion of WRF partnership approach to address all model S&T infusion

NOAA Satellites Migration Plan

NOAA's the Fiscal Year 2007 Annual Guidance Memorandum (AGM) describes eight future directions for the agency. To accommodate migration to the Satellite Sub-Goal architecture targets in conformance with these directions, the following approaches are recommended:

Take the Pulse of the Planet – Integrate Global Observations: Integrate ocean observing requirements into the requirement set for the NOAA satellite component of the Global Environmental Observing System of Systems.

Advance NOAA's Modeling Capability: Integrate modeling requirements into the requirement set for NOAA satellite products

Provide Leadership for the Oceans: --

Increase Climate Information, Services, and Products: Promote sufficient quality control to optimize the use of satellite data in climate models.

Provide Critical Information for Water Resources: --

Support the US Transportation Systems: Continue to expand Search and Rescue services to US Transportation Systems

Promote Environmental Literacy: Expand tailoring of satellite data products to educational needs

Deliver Effective, Efficient Decision-Support Information: Re-examine the performance requirements on the satellite data delivery infrastructure

NOAA Mission Support Migration Plan

NOAA will build on an effort already underway by the National Weather Service to implement a MPLS network supporting all of the NWS wide area requirements. Work is already underway to move the Administrative Wide Area Network into the NWS network, sharing access at common locations. Other Line Office are moving to the same technology and will also share common access. While a program change request has been submitted for NOAA's 2007 budget, at this time, transition costs are funded by individual offices with available funding. As savings from the enterprise network (projected at $32M over 5 years) are realized NOAA will be able to move to an enhanced, common network management structure and to acquire diverse access for major locations.

6.5. Bureau of Census Migration Plan

See Section 6.1.2 of this report

6.6. BEA Migration Plan

Table 22 provides the Application Layer/View migration plan for FY 2005 through FY 2009 with specific out-year initiatives all of which are linked to the program area being supported.

Table 22 – BEA Migration Plan

Programs	2005	2006	2007	2008	2009
Office Automation Software	Upgrade operating system, Office Automation Suite, & Desktop Mgmt System.	Research OS, Office Automation Suite, & Desktop Mgmt System upgrades	Research OS, Office Automation Suite, & Desktop Mgmt System upgrades.	If approved, upgrade OS, Office Automation Suite, & Desktop Mgmt t System.	Research OS, Office Automation Suite, & Desktop Mgmt System upgrades.
COTS Software	Upgrade/Add various COTS software as needed.	Upgrade/Add various COTS software as needed.	Upgrade/Add various COTS software as needed.	Upgrade/Add various COTS software as needed.	Upgrade/Add various COTS software as needed.
STATS (GDP) System	Implement Product-side Current Estimate & develop & test Product-side Annual Revision capability.	Develop & parallel test Income-side Current Estimate & Annual Revision	Upgrade STATS, as appropriate.	Upgrade STATS, as appropriate, & prepare for 2008 NIPA Benchmark Revision	Upgrade STATS, as appropriate, & implement 2009 NIPA Benchmark Revision.
Regional Systems	Continue Regional system redesign (as necessary).	Continue Regional system redesign (as necessary).	Continue Regional system redesign (as necessary).	Continue Regional system redesign (as necessary).	Continue Regional system redesign (as necessary).
	Begin upgrading and enhancing the RIMS system	Continue enhancement of the RIMS system	Continue RIMS redesign (as necessary).	Continue RIMS redesign (as necessary).	Continue RIMS redesign (as necessary).
Electronic Survey Reporting	Enhance ASTAR, for appropriate IID/BPD surveys. Investigate 2nd generation ASTAR.	Enhance ASTAR, for appropriate IID/BPD surveys. Prototype 2nd generation ASTAR.	Extend 2nd generation ASTAR to other IID/BPD surveys.	Continue to enhance 2nd generation ASTAR & extend to other IID/BPD surveys, as appropriate.	Continue to enhance 2nd generation ASTAR, as appropriate.
Industry Systems	Upgrade/enhance Industry accounts systems.	Upgrade/enhance Industry accounts systems.	Support Industry Accounts Systems	Support Industry Accounts Systems	Support Industry Accounts Systems
FAME & Econometric / Statistical Software	Continue to support conversion to FAME.	Continue to support conversion to FAME.	Research upgrade to econometric/ statistical analysis tools.	Upgrade econometric/ statistical analysis tools.	Continue upgrade of econometric/ statistical analysis tools, if necessary.

Programs	2005	2006	2007	2008	2009
International Systems Modernization	Continue modernization of international systems, including survey editing system, investigate time-series, & redesign Private Services.	Continue modernization of International systems.	Continue modernization of International systems.	Continue modernization of International systems.	Continue modernization of International systems.
Upgrade Biomedical Research and Development Price Index (BRDPI) Survey	Implement Electronic survey data collection, upon approval	Enhance eSurvey data collection.	Enhance eSurvey data collection.	Enhance eSurvey data collection.	Enhance eSurvey data collection.

6.7. ESA Migration Plan

The timescale for the total ESA network infrastructure migration is FY2006. ESA IT in-house staff personnel will perform all work and testing as shown in table 23

Table 23 – ESA Migration Plan

Economics and Statistics Administration Infrastructure Migration Phases May 2003						
Phase I	**Phase II**	**Phase III**	**Phase IV**	**Phase V**	**Phase VI***	**Phase VII***
Planning and Implementation	Contingency Fail Over of Mail Services and Internet Connectivity	Preparations of Contingency and Improved Performance of Services and Connectivity	Installation of Imposed "New" Department IT Security Requirements	Final Testing of Infrastructure and creation of NIACAP Accreditation and Audit.	Re-install and Move Present Infrastructure to Bowie Site as Primary Server Hosting Facility for HCHB	Re-install STAT-USA, MOUs and Other Server Equipment to Bowie Facility
August 2002 to February 2003	February 2003 to May 2003	March 2003 to June 2003	March 2003 to July 2003	April 2003 to August 2003	FY04	FY05
1. Coordinate all IT logistics for design review, purchasing,	1. Install secondary DNS for Internet name	1. Install 2nd T1 line 2. Install two additional	1. Upgrade PIX image on 525 2. Install PIX	1. Network multi-scenario fail-over testing to include	1. Move 7206 to Bowie 2. Move	1. Move STAT-USA to Bowie 2. Move all other ESA

Economics and Statistics Administration Infrastructure Migration Phases May 2003						
Phase I	**Phase II**	**Phase III**	**Phase IV**	**Phase V**	**Phase VI***	**Phase VII***
receiving, deploying and implementing 2. Install fail-over of Internet connectivity from HCHB to Bowie 3. Test and evaluate all equipment and clients for network connectivity 4. Create visual and written IT Documentation	services 2. Install SMTP for mail routing at COOP site 3. Create and Install DMZ at COOP site 4. Install Cisco PIX 515 to protect ESA LAN from SMTP intrusion attacks. Move SMTP server behind firewall 5. Testing of multi scenario 6. Create visual and written IT Documentation	T1 lines 3. Re-configure boarder router for redundancy and load balancing 4. Load balance four T1 lines between HCHB and Bowie 5. Testing of multi scenario 6. Create visual and written IT Documentation	525 @ H. Remove PIX 520 3. Upgrade PIX image on 520 4. Install PIX 520 @ B. Return PIX 525 to H 5. Upgrade PIX image on returned 525. Install 2nd d PIX 525 @ H 6. Install 2nd VPN @ H 7. Test 8. Documentation	new DMZ hosts and services 2. Security Baseline Analysis: Report on entire ESA infrastructure, for NIACAP baseline 3. Create visual and written IT Documentation	2651 to HCHB 3. Move 3060 to Bowie 4. Move 3005 to HCHB 5. Move PIX 525's to Bowie 6. Move PIX 520+515 to HCHB 7. Testing of multi scenario 8. Create visual and written IT Documentation	supported services to Bowie. (ESA Internet and Economic Indicators web site) 3. Move all OCIO MOUs to Bowie 4. Move Primary DNS services for Department to Bowie 5. Testing of multi scenario 6. Create visual and written IT Documentation

6.8. MBDA Migration Plan

Table 24 – MBDA Migration Plan

	Application Upgrades/ New Application Development	Est. Start Date	Est. Finish Date	Team Lead
Build Virtual Minority Business Development Center (VMBDC)	**Enhance Portal usability and interface:** • Advertise and highlight tools whose registration numbers have declined or have been stagnant. • Restructure the content management approval process (programming). Add new features such as email notification of items in queen, new access levels and user management controls. • Add a global section to the Portal, including a section specifically dedicated to Africa and Spain initiatives, export and trading.	In progress 11/2004 03/2005	Ongoing Ongoing Ongoing	OITRI
	• **Build a loan matching application:** • Explore the feasibility and specifications for an online bid-matching application. • Add a Youth section to the Portal including a new home for the EBLS application and information, a portion of the message board dedicated to youth entrepreneurs and pages with information for them to get started, inspiring stories, cool facts, and such. • Define the requirements and develop a loan referral application	Undecided 03/2005 Under discussion Undecided	Under discussion 08/2005	ONABD OBD
	• Add new Regional pages...an area especially for the five regional offices to maintain and update, including staff information, events, etc...which tie into the main calendar events.	2005	07/31/05	OBD

	Application Upgrades/ New Application Development	Est. Start Date	Est. Finish Date	Team Lead
Utilize IT to Improve Efficiency and Effectiveness	**Create or enhance performance systems so that MBDC, NABDC, MBOC, and MBDA Staff contributions to Agency performance are tracked and reported.**	Ongoing	Ongoing	OBD
	• Process new financial assistance award packages			OBD
	• Implement and continuous improvement of programs	FY 2005	FY 2005	
	• **Tuck School of Business:**			
	• Improve/standardize service quality among all BDCs and build skills to work with larger MBEs	FY 2005	FY 2005	
	Advance training program for MBDA and BDC staff utilizing Systems Integrated Model	02/2005	08/2005	EGonzales OBD
	▪ Update Performance System: a) Improve Needs Analyzer b) Integrate new BDC performance requirements onto Portal c) Integrate new project assessment and narrative reporting system	08/2005	12/2005	SBoykin OBD
	▪ Provide ongoing training programs to BDC and NEC staff			
	▪ Develop BDC Handbook			
	▪ Revise MBOC program to increase opportunities for MBEs:			
	▪ Develop MBOC Handbook			

	Application Upgrades/ New Application Development	Est. Start Date	Est. Finish Date	Team Lead
Create and Enhance On-line Applications (Tools)	• Create an online telework application (front-end) in progress • Create an online telework application (backend for administrative) • Create an online OITRI Inventory application (repository of what surplus equipment exist for telework usage) • Inventory of Web servers and sites • Information Collection Budget • Remediation Plan	11/2004 06/2005 01/2005 05/2005 03/2005 04/2005 04/2005	6/2005 9/2005 Ongoing Ongoing 06/2005 11/2005 06/2005	MBarber/ OITRI OITRI
	Migrate HQ onto the HCHB Network • Migrate Chicago onto the HCHB Network • Migrate Atlanta onto the HCHB Network • Migrate New York onto the HCHB Network • Migrate Dallas onto the HCHB Network • Migrate San Fran onto the HCHB Network	2004 03/2005 Undecided Undecided Undecided	01/2005	OITRI
	Automate Travel and Contract Administration: • Investigation by DOC to purchase travel manager or implement e-Travel for all DOC • Implement updated forms management system for contract administration and personnel performance management administration	Ongoing FY 2005	FY 2005	OITRI

	Application Upgrades/ New Application Development	Est. Start Date	Est. Finish Date	Team Lead
	• **Congressional Information System (facilitates reporting by congressional district as well as other key parameters)** • Implement using phased approach with initial and subsequent operating capabilities • Update the CIS based on requirements	1st phase= 05/2004 2nd phase FY 2005	6/2004 Ongoing	OITRI OLEIA
	• Track customer service metrics • Utilize automated tools to monitor OITRI customer service vs. the TrackIt System already in place; either add modules onto the system or obtain a new system inhouse or shelf bought. • Include customer service standard in appropriate performance plans and online monthly reports available to all MBDA staff. • Create a new customer service practice for all help and helpdesk items. • Create an online HelpDesk area on the Portal, which includes latest information on security network, downloads, helpdesk information (stats, etc), online equipment request form, etc.	02/2005 03/2005 03/2005 03/2005 11/2004	Ongoing 09/2005 Ongoing 07/2005 09/2005	OITRI
	Create and Maintain MED Week Website Create task order for possible procurement of MED Week (national) hosting.	02/2005	Ongoing	OITRI
Implement Knowledge Management Program	• **Develop an electronic MBDA Archive** • Digitize and store all MBDA publications and documents	FY 2005	FY 2005	OITRI
Human Capital/ Training/Financial Management	• Implement customer relations • management processes throughout	05/2005 12/2004	06/2005 06/2005	OAFM OBD

	Application Upgrades/ New Application Development	Est. Start Date	Est. Finish Date	Team Lead
	• agency • Conduct Entrepreneurial Tuck training for MBDA and Project staff. • Utilize online training to enhance human • Capital. Cross match training needs • With on-line programs • Tuck's faculty will provide training on importance of a customer relations management system • Consultant will help employees customize their own CRM Systems • Improve quality of financial services provided by NIST. • Improve the monitoring of travel and purchase cards while improving associated services to customers. • Explore option of having NIST process MBDA's grants. • **Evaluate Quality assurance measures in MBDA tools and report systems** • Source verification process, methodology used; performance reporting.	10/2004 FY 2005 06/2005	09/2005 FY 2005 08/2005	OAFM OPPE

7. Department of Commerce Communications Strategy

The effectiveness of the enterprise architecture is directly related to how well the architecture and its role is communicated throughout the Department. DOC has taken a strong leadership position in deploying its architecture information via the Web, and in establishing the governance process for integrating the enterprise architecture into the decision making process of the Dept of Commerce.

DOC has begun an outreach process to communicate the enterprise architecture to program and senior managers to make them aware of the process and the value that the enterprise architecture can provide. Groups are being established in various lines of business to determine the best manner in which to utilize the architectural artifacts to reduce inefficiencies and increase productivity and integration. Additionally, cross-functional analysis of business lines is being looked at to determine where and how data and processes can be shared or reused.

8. Dept of Commerce Performance Metrics

The Department of Commerce has developed a series of performance measures for each of the goals and subordinate objectives and then mapped to the appropriate Operating Unit(s).

Strategic Goal 1: ***Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers and consumers.***

Objective 1.1: Enhance economic growth for all Americans by developing partnerships with private sector and nongovernmental organizations

Table 25 – Objective 1.1 Mapping of Metrics to Operating Units

Bureau	Outcome	Performance Measure(s)	PRM Mapping
Economic Development Administration	Increase private enterprise and job creation in economically distressed communities	Private sector dollars investing in distressed communities as a result of EDA investments	Financial Management Economic Development
		Jobs created or retained in distressed communities as a result of EDA investments	Economic Development
		State and local dollars committed per EDA dollar	Economic Development
		Percentage of investments to areas of highest distress	Economic Development
		Percentage of EDA dollars invested in technology-related projects in distressed areas	Economic Development
	Improve community capacity to achieve and sustain economic growth	Percentage of economic development districts and Indian tribes implementing economic development projects from the comprehensive economic development strategy process that lead to private investments and jobs.	Economic Development
		Percentage of sub-state jurisdiction members actively participating in the economic development district program	Economic Development
		Percentage of University Center clients taking action as a result of the assistance facilitated by the University Center	Economic Development
		Percentage of University Center clients taking action as a result of the assistance facilitated by the University Center	Economic Development

Bureau	Outcome	Performance Measure(s)	PRM Mapping
		Percentage of Trade Adjustment Assistance Center (TACC) clients taking action as a result of the assistance facilitated by TACC	Economic Development
		Percentage of those actions taken by TACC clients that achieved the expected results	Economic Development
		Percentage of local technical assistance and economic adjustment strategy investments awarded in areas of highest distress	Economic Development
ITA	Increase trade opportunities for U.S. firms to advance the United States international commercial and strategic interests	Number of new or enhanced ITA partnerships with public and private sector entities to promote U.S. exports	Customer Results
		Placeholder for new measure dealing with international trade negotiations	TBD
		Number of new-to-market firms	Customer Results
		Dollar exports in targeted products and markets	Mission and Business results
	Expand U.S. exporter base	Percentage of undertaken advocacy actions completed successfully	Mission and Business results
		Dollar value of completed advocacies (U.S. export content)	Mission and Business results
		Number of U.S. exporters entering new market	Customer Results
		Number of U.S. firms exporting for the first time	Process and Activities
		Number of export transactions made as a result of ITA involvement	Process and Activities
	Improve customer and stakeholder satisfaction	Customer satisfaction with the quality of ITA's products and services	Customer Results
		Customer perception of ease of access to export and trade information and data	Customer Results
		Customer value: level of awareness of ITA products	Customer Results

Bureau	Outcome	Performance Measure(s)	PRM Mapping
		and services	
		Employee job satisfaction	Mission and Business Results
		Number of customers acquired through proactive ITA efforts	Customer Results
		Number of U.S. exporter activities undertaken per customer surveyed	Processes and Activities
	Improve the U.S. competitive advantage through global e-commerce	Number of new subscribers using BuyUSA.com e-services	Customer Results
		Customer perception of portal ease of use Percentage of ITA's significant products and services provided electronically to external customers	Customer Results
MBDA	Increase opportunities and access of minority-owned businesses to the marketplace and financing	Total number of all clients receiving services	Customer Results
		Number of contract awards obtained	Process and Activities
		Dollar value of contract awards obtained	Mission and Business Results
		Number of financial awards obtained	Mission and Business Results
		Dollar value of financial awards obtained	Mission and Business Results
		Number of employee training hours	Mission and Business Results
		Number of new job opportunities created	Mission and Business Results
		Percent increase in client gross receipts	Mission and Business Results
		Percent increase in American Customer Satisfaction Index (ACSI)	Customer Results
		Number of national and regional strategic partnerships	Mission and Business Results

Objective 1.2: Advance responsible economic growth and trade while protecting American security.

Table 26 – Objective 1.2 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
ITA	Ensure fair competition in international trade	Percentage of AD/CVD cases completed on time	Processes and Activities
		Number of market access and compliance cases initiated	Process and Activities

Bureau	Outcome	Performance Measure	PRM Mapping
		Number of market access and compliance cases concluded	Processes and Activities
BIS	Protect the U.S. national security and economic interests by enhancing the efficiency of the export control system	Median processing time for referral of export licenses to other agencies (days)	Processes and Activities
		Median processing time for export licenses not referred to other agencies (days)	Processes and Activities
		Median processing time for issuing draft regulations (months)	Processes and Activities
		Level of exporter understanding of BIS export control requirements	Customer Results
		Number of industry and export control assessments	Processes and Activities
		Number of internal control programs that contribute to compliance with license conditions	Processes and Activities
		Develop an internal control program (ICP) for the Transshipment Country Export Control Initiative (TECI)	Processes and Activities
	Ensure U.S. industry compliance with the Chemical Weapons Convention (CWC) Agreement	Number of cases opened that result in the prevention of a criminal violation or the prosecution of a criminal or administrative case	Mission and Business Results
		Number of post-shipment verifications completed	Processes and Activities
	Enhance the export and transit control systems of nations that lack effective control arrangements	Number of targeted deficiencies remedied in the export control systems of program nations	Processes and Activities

Objective 1.3: Enhance the supply of key economic and demographic data to support effective decision-making of policymakers, businesses, and the American public.

Table 27 – Objective 1.3 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
Census	Meet the needs of policymakers, businesses and non-profit organizations, and the public for current measures of the U.S. population, economy,	Household response rate for the Current Population Survey, the National Crime Victimization Survey, and the American Housing Survey; response rate for the National Health	Mission and Business Results

Bureau	Outcome	Performance Measure	PRM Mapping
	and governments	Interview Survey; and household response rate for the Survey of Income and Program Participation (SIPP)	
		Release data products from the SIPP and release data products from the Survey of Program Dynamics	Mission and Business Results
		Release principal economic indicators	Mission and Business Results
		Response rates for Annual Economic Surveys used to update benchmark data during intercensal years [Includes Annual Survey of Manufacturers (ASM), the Annual Trade Survey (ATS), the Annual Retail Trade Survey (ARTS), and the Service Annual Survey (SAS)]	Processes and Activities
	Support the economic and political foundations of the United States by producing benchmark measures of the economy and population for the administration and equitable funding of federal, state, and local programs	Conduct the Economic Census and Census of Governments	Mission and Business Results
		Release Decennial Census data products, release Census of Governments data products, and release Economic Census data products	Mission and Business Results
		Release population estimates and survey controls for all subgroups and geographies	Mission and Business Results
		Introduce new Census 2000-based samples for the consumer expenditures survey-quarterly (CE-Q)	Customer Results
		Introduce new Census 2000-based samples for the consumer expenditures survey-diary (CE-D)	Customer Results
		Introduce new Census 2000-based samples for the National Crime Victimization Survey (NCVS)	Customer Results
		Introduce new Census 2000-	Customer Results

Bureau	Outcome	Performance Measure	PRM Mapping
		based samples for the American Housing Survey-National (AHS-N)	
	Meet constitutional and legislative mandates by implementing a re-engineered 2010 Census that is cost-effective, provides more timely data, improves coverage accuracy, and reduces operational risk	Implement the American Community Survey (ACS)	Processes and Activities
		Implement MAF/TIGER Modernization	Technology
		Conduct early 2010 Census planning, development, and testing	Processes and Activities
	Support innovation, promote data use, minimize respondent burden, respect individual privacy, and ensure confidentiality	Response to the Annual Boundary and Annexation Survey (ABAS)	Mission and Business Results
		Meet milestone dates for evaluating and expanding Web-based technology solutions to include more functionality/business processes	Technology
		Segment score for overall customer satisfaction on the American Customer Satisfaction Index (ACSI)	Customer Resuts
BEA	Promote a better understanding of the U.S. economy by providing the most timely, relevant, and accurate economic data in an objective and cost-effective manner.	Reliability of delivery—economic data (number of scheduled release issued on time)	Processes and Activities
		Customer satisfaction with quality of products and services (mean rating on a 5-point scale)	Customer Results
		Percentage of GDP estimates correct	Processes and Activities
		Improving GDP and the economic accounts Accelerating economic estimates	Processes and Activities
		Meeting U.S. international obligations	Mission and Business Results
		Upgrading information technology systems	Technology

Strategic Goal 2: ***Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science***

Objective 2.1: Develop tools and capabilities that improve the productivity, quality, dissemination, and efficiency of research

Table 28 – Objective 2.1 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
TA/OTP	Provide leadership in promoting national technology policies that facilitate U.S. preeminence in key areas of science and technology	Support/Improve American Innovation System	Mission and Business Results
		Advance role of technology in U.S. economic growth and homeland security	Mission and Business Results
		Strengthen competitive position of American technology industries	Mission and Business Results
		Strengthen US/OTP's organization, capabilities, and resources to maximize the effectiveness of its activities and services	Mission and Business Results
TA/NIST	Provide technical leadership for the nation's measurement and standards infrastructure	Qualitative assessment and review of technical quality and merit using peer review	Processes and Activities
		Citation impact of NIST-authored publications	Mission and Business Results
		Peer-reviewed technical publications	Processes and Activities
	Assure the availability and efficient transfer of measurement and standards capabilities essential to established industries	Number of Standard Reference Materials (SRMs) sold	Customer Results
		Number of NIST-maintained datasets downloaded	Customer Results
		Number of items calibrated	Mission and Business Results
		Economic impact studies	Mission and Business Results
	Catalyze, reward, and recognize quality and performance improvement practices in U.S. business and other organizations	Percentage of applicants indicating satisfaction with the relevance and importance of the feedback report	Customer Results
		Number of Baldrige Criteria	Customer Benefit

Bureau	Outcome	Performance Measure	PRM Mapping
		disseminated	
TA/NTIS	Enhance public access to worldwide scientific and technical information through improved acquisition and dissemination activities	Number of new items available (annual)	Processes and Activities
		Number of information products disseminated (annual)	Processes and Activities
		Customer satisfaction	Customer Results

Objective 2.2: Protect intellectual property and improve the patent and trademark system.

Table 29 – Objective 2.2 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
PTO	Create a more flexible organization through transitioning patent and trademark applications to e-government operations and participating in intellectual property development worldwide	Patent applications filed electronically	Technology
		Patent applications managed electronically	Processes and Activities
		Trademark applications filed electronically	Technology
		Trademark applications managed electronically	Technology
	Improve the quality of patent products and services, and optimize patent processing time	Improve patent quality by reducing the error rate	Processes and Activities
		Patent-in-process reviews	Processes and Activities
		Patent examiner certification	Mission and Business Results
		Patent examiner re-certification	Mission and Business Results
		Reduce average patent first action pendency (months)	Processes and Activities
		Reduce average patent total pendency (monthly)	Processes and Activities
		Patent efficiency	Processes and Activities
		Patent productivity	Processes and Activities
	Improve the quality of trademark products and services, and optimize trademark processing	Improve trademark quality by reducing the error rate	Processes and Activities

Bureau	Outcome	Performance Measure	PRM Mapping
	time		
		Trademark-in-process reviews	Processes and Activities
		Reduce average trademark first action pendency (months)	Processes and Activities
		Reduce average trademark total pendency (monthly)	Processes and Activities
		Trademark efficiency	Processes and Activities
		Trademark productivity	Processes and Activities

Objective 2.3: Advance the development of global e-commerce and enhanced telecommunications and information services.

Table 30 Objective 2.3 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
NTIA	Increase competition within the telecommunications sector and universal access to telecommunications services for all Americans	Provide the policy framework for introduction of new technologies	Processes and Activities
		Policy customer survey	Customer Results
	Efficient and effective allocation of radio spectrum	Timeliness of processing	Processes and Activities
		Percentage of requests accomplished online	Technology
		Completeness and accuracy of agency assignment requests	Processes and Activities
		Customer satisfaction survey on training course	Customer Results
	Ensure broader availability, and support new sources, of advanced telecommunications and information services	Digital broadcasting conversion	Processes and Activities
		Quality of basic research as reflected in peer-reviewed publications	Processes and Activities
		Level of technology transfer activities conducted with the private sector through CRADAs	Mission and Business Results

Strategic Goal 3: ***Observe, protect, and manage the Earth's resources to promote environmental stewardship***

Objective 3.1: Advance understanding and predict changes in the Earth's environment to meet America's economic, social, and environmental needs.

Table 31 – Objective 3.1 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
NOAA	Improve accuracy and timeliness of weather and water information	Lead time (minutes), accuracy (%), and false alarm rate (FAR,%) for severe weather warnings for tornadoes	Mission and Business Results
		Lead time (minutes) and accuracy (%) for severe weather warnings for flash floods	Mission and Business Results
		Hurricane forecast track error (48-hour)	Mission and Business Results
		Accuracy (%) of 1-day threat score forecast for precipitation	Mission and Business Results
		Lead time (hours) and accuracy (%) for winter storm warnings	Mission and Business Results
		Cumulative percentage of U.S. shoreline and inland areas that have improved ability to reduce coastal hazard impacts	Mission and Business Results
	Increase understanding of climate variability and change	U.S. temperature forecasts	Mission and Business Results
		New climate observations introduced	
		Assess and model carbon sources throughout the United States	Mission and Business Results
		Assess and model carbon sources and sinks globally	Mission and Business Results
		Determine actual long-term changes in temperature and precipitation throughout the United States	Mission and Business Results

Objective 3.2: Enhance the conservation and management of coastal and marine resources to meet America's economic, social and environmental needs.

Table 32 – Objective 3.2 Mapping to Operating Units

Bureau	Outcome	Performance Measure	PRM Mapping
NOAA	Improve protection, restoration, and management of coastal and ocean resources through ecosystem-based management	Number of overfished major stocks of fish	Mission and Business Results
		Number of major stocks with an "unknown" stock status Percentage of plans to rebuild overfished major stocks to sustainable levels	Mission and Business Results
		Increase in number of threatened species with lower risk of extinction	Mission and Business Results
		Number of commercial fisheries	Mission and Business

Bureau	Outcome	Performance Measure	PRM Mapping
		that have insignificant marine mammal mortality	Results
		Increase in number of endangered species with lower risk of extinction	Mission and Business Results
		Number of habitat acres restored (cumulative)	Mission and Business Results
	Support the nation's commerce with information for safe, efficient, and environmentally sound transportation	Reduce the Hydrographic Survey backlog within navigationally significant areas (square nautical miles surveyed per year)	Processes and Activities
		Percentage of National Spatial Reference System (NSRS) completed (Cumulative %)	Mission and Business Results
		Accuracy (%) and FAR of forecasts of ceiling and visibility (3 miles/1000 ft.) (aviation forecasts)	Mission and Business Results
		Accuracy (%) and FAR of forecasts for winds and waves (marine forecasts) wind speed and wave height	Mission and Business Results

Management Integration Goal: Achieve organizational and management excellence

Table 33 – Management Integration Goal Mapping

Bureau	Outcome	Performance Measure	PRM Mapping
Department Management	Ensure effective resource stewardship in support of the Department's programs	Clean audit opinion on Department consolidated financial statements	Processes and Activities
		Deploy Commerce-wide integrated financial management system	Technology
		Consolidate Commerce-wide integrated financial system platforms	Technology
		Implement competitive sourcing	Processes and Activities
		Funds obligated through performance-based contracting	Processes and Activities
		Small purchases made using credit cards	Processes and Activities
		Use of online procurement to publish synopses and solicitations for proposals to contract with the Department	Technology
		Increase percentage of total obligations awarded as contracts to small businesses	Processes and Activities
		Reduce energy consumption per square foot from 1985 baseline	Processes and Activities

Bureau	Outcome	Performance Measure	PRM Mapping
		Ensure a secure workplace for all Department of Commerce employees	Processes and Activities
		Ensure a safe workplace for all Department of Commerce employees	Mission and Business Results
	Ensure retention of highly qualified staff in mission-critical positions	Strategic competencies—ensure competency in leadership and in mission-critical occupations	Mission and Business Results
		Strategic competencies—ensure comprehensive training and development strategies	Mission and Business Results
		Strategic competencies—ensure diverse candidate recruitment	Mission and Business Results
		Efficiency and effectiveness of hiring systems using the Commerce Opportunities Online (COOL) system	Mission and Business Results
		Increase the alignment of performance management with mission accomplishment	
		Implement a telecommuting program	Technology
	Acquire and manage the technology resources to support program goals	Transactions converted to electronic format	Technology
		IT planning and investment review program maturity (on a scale of 0-5)	Technology
		IT architecture program maturity (on a scale of 0-5)	Technology
		IT security program maturity (on a scale of 0-5)	Processes and Activities Technology
		Percentage of IT system security plans completed	Processes and Activities Technology
		Percentage of IT system security plans certified and accredited	Processes and Activities Technology
		Percentage of unsuccessful intrusion attempts	Processes and Activities
Office of the Inspector General (OIG)	Provide improvements to Commerce programs and operations by identifying and completing work that (1) promotes integrity, efficiency, and effectiveness; and (2) prevents and detects fraud, waste, and	Percentage of Commerce's management challenges, stakeholder concerns, and other critical issues addressed by OIG work products	Mission and Business Results

Bureau	Outcome	Performance Measure	PRM Mapping
	abuse.		
		Percentage of OIG recommendations accepted by departmental and bureau management	Processes and Activities
		Dollar value of financial benefits identified by OIG	Processes and Activities
		Percentage of criminal and civil matters that are accepted for prosecution	Mission and Business Results

8.1. Operating Units Performance Metrics

As noted above the performance measures are mapped to the appropriate operating units to monitor progress. Included in this section are the metrics for several of the operating units, more detailed documentation is provided in the reference materials.

8.1.1. NOAA Performance Metrics

The following tables specify the performance indicators for the Ecosystems Goal Programs

Table 34 – Ecosystems Goal Programs

Performance Indicator	Units of Measure	Baseline	Target
Acres Restored	Acres	4,500	4,500 annually
Acres Restored	Acres	4,500	4,500 (annually)
Acres Protected	Acres	6,000	6,000 (annually)
Number of sites	Sites	451	12 (annually)
Percent of proposed actions reviewed	Percent proposed actions	50 percent	70 percent (2011
Percent proposed actions incorporating recommendations	Percent	30 percent	55 percent (2011)
Hours of Volunteer opportunities	hours	90,000	100,000 (annually)
Number of cases where liability is resolved	cases	110	155 (by 2011): 9 annually
Number of invasive species detected	species		10 (by 2011): 2 annually
Number of populations eradicated, controlled, or mitigated	Populations	6	16 (by 2011): 2 annually
Percent of ships for which prevention technologies are available	Ships	0 percent	100 percent (by 2011)
Stream miles re-opened	Stream Miles	410	410 (annually)
Stream miles made accessible	Stream Miles	410	410 (annually
Number of FMPs	FMPs	10 (annually)	10 (annually)

The following tables specify the performance indicators for Climate Program

Table 35 – Climate Program Performance Indicators

Indicator	Unit of Measure	Baseline	Target
Number of climate-forced biological models	Number of climate-forced biological models	0 (2003)	6 (2011)
Number of coastal states with accurate and precise elevation maps depicting areas vulnerable to sea-level rise	Number of coastal states	0 (2003)	6 (2011)
Number of sentinel species	Number of sentinel species	0 (2003)	6 (2011)
Improved automated quality control through increased real-time network monitoring	Cumulative number of networks monitored per year (#/yr)	1 (2003)	11 (2010)
Increase corrected deficiencies as listed in GCOS 2nd Adequacy Report	Cumulative Total Number of Corrected Deficiencies	0 (2003)	74 (2010)
Increase number of U.S. aircraft and tower sites to improve accuracy of carbon uptake measurements	Number of sites	10 (2003)	16 (2004), 36 (2008)
Increase number of global carbon sampling sites	Number of sites	1 (2003)	65 (2006)
Assess and model carbon sources and sinks globally	Decrease in uncertainty	3 sites (2003)	0.1 Pg C/yr uncertainty
Conduct aerosols/tropospheric ozone-climate process studies	# of studies	1 (2001)	3 (2004), 5(2005)
Produce CCSP Synthesis and Assessment Products with NOAA as the lead agency	Number of Products	0 (2003)	3 (2006)
Reduce the uncertainty in the direct scattering and absorption of radiation by aerosols of North American origins	Percent reduction in uncertainty	2001 IPCC	
Reduce the Uncertainty in Model Simulations of the Influence of Aerosols on Climate	Decrease in uncertainty	2001 IPCC	50% Improved
Reduce the Uncertainty in the Magnitude of the North American Carbon Uptake	Decrease in uncertainty	+/-0.6GT (2003)	+/-0.4GT (2006)
Increase Volume of Data Ingested Annually and placed into the archive	Volume in Petabytes (PB/year)	0.145 (2003)	4.1 (2010)
Reduce overall average time between observations taken and delivery to the archive	Number of days	20 (2003)	1 (2010)
Produce CCSP Synthesis and Assessment Products with NOAA as the supporting agency	Number of Products	0 (2003)	5 (2006)
Reduce the error in global measurement of sea surface temperature	Potential satellite bias error (degrees C)	0.7 (2003)	0.2 (2010)
Determine Actual Long-term Changes in Temperature and Precipitation in the contiguous (CONUS) United States	Percent Explained Variance in temperature (National CONUS)	79% (2006)	98.3% (2010)
Determine Actual Long-term Changes in Temperature and Precipitation in the contiguous (CONUS) United States	Percent Explained Variance in precipitation (National CONUS)	43% (2003)	95.1% (2010)
Establish Arctic Component of Global Ocean Observing System	Percent of observing system in place	0 (2003)	100 (2010)
Establish Arctic Component of Global	Percent of collected data	0% (2003)	100% (2010)

Indicator	Unit of Measure	Baseline	Target
Ocean Observing System	that is archived and available		
Extend climate analyses and reanalyses to include earlier and later time periods	Number of years that climate analysis/reanalysis products are provided	55 (2003)	130 (2010)
Cli OA: Implement the Global Ocean Observing System	Total System Percent Complete	45% (2003)	100% (2010)
Cli OA: Produce satellite derived climate quality observations, climate data records (CDRs), and assessments	Monitor performance of sensors (number monitored)	6 (2003)	55 (2010)
Produce satellite derived climate quality observations, climate data records (CDRs), and assessments	Number of assessments per year	1 (2003)	5 (2010)
Produce satellite derived climate quality observations, climate data records (CDRs), and assessments	Number of CDRs per year	6 (2003)	41 (2010)
Reduce uncertainty in temperature and precipitation trends in Alaska	Percent Explained Variance in precipitation (Alaska)	25% (2003)	96% (2010)
Reduce uncertainty in temperature and precipitation trends in Alaska	Percent Explained Variance in temperature (Alaska)	76% (2003)	99% (2010)
Volume of data and information delivered on-line to NOAA customers	Volume in Terabytes (TB/year)	1 (2003)	90 (2010)
New Climate Observations introduced	Number per year	120 (2003)	1014 (2005)
Cumulative Skill Score Computed Over the Regions Where Predictions are Made	Skill score	23 (2003)	22 (2006)
Demonstrate skill in forecasts of U.S. temperature in weeks 3 and 4	Brier skill score x100	0 (2003)	12 (2010)
Demonstrate skill in week-two forecasts of extreme US temperature events in the upper and lower 20% of the climatological distribution	Brier skill score x100	0 (2003)	15 (2010)
Increase skill of week-two forecasts of US precipitation	Ranked probability skill score x100 (Temp/Precip)	0 (2003)	12 (2010)
Increase skill of week-two forecasts of US temperature	Ranked probability skill score x100 (Temp/Precip)	8 (2003)	22 (2010)
Develop new analyses of the impact of climate on water management decisions and outcomes	# of sectors or activities, services, and/or partnerships are established		
Improve society s ability to plan and respond to climate variability and climate change using NOAA climate products and information	Number of new grants made for NCTP	3	20
Improve society s ability to plan and respond to climate variability and climate change using NOAA climate products and information	Number of states with drought preparedness plans using NOAA climate information or NOAA provided triggers	23	53
Increase the number of WFO and RFC climate focal points trained in climate services	Number of field offices with localized ENSO impacts forecasts (#/yr)	35 (2006)	134 (2010)
Initiate new climate research in underrepresented regions of the United States	# of Regional Integrated Science Assessment Programs	6 (2003)	11 (2010)
Number of peer-reviewed risk and impact	Number of publications	15	Under

Indicator	Unit of Measure	Baseline	Target
assessments/evaluations published and communicated to decision makers			Development
Better integrate climate research into operational decision making	# of NOAA Climate Transition Program applications	0 (2003)	5 (2010)

Table 36 summarizes the performance goals for Weather and Water.

Table 36 – Weather and Water Performance Goals

Measure	Line of Business	Unit of Measures	FY 2004 Target	FY 2010 Target
Lead Time (Minutes), Accuracy (%), and False Alarm Rate (FAR, %) for Severe Weather Warnings Tornadoes	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	Minutes	12	17
		% (percent)	72%	78%
		% (percent)	72%	70%
Lead Time (Min) and Accuracy (%) for Severe Weather Warnings for Flash Floods	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	Minutes	47	55
		% (percent)	87%	91%
Hurricane Forecast Track Error (48 Hour)	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	Nautical Miles	130	123
Accuracy (%) (Threat Score) of Day 1 Precipitation Forecasts	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	% (percent)	29	28
Lead Time (Hours) and Accuracy (%) for Winter Storm Warnings	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	Hours	15	20
		% (percent)	88%	92%
Cumulative Percentage of U.S. Shoreline and Inland Areas that Have Improved Ability to Reduce Coastal Hazard Impacts	Disaster Management Education Environment Management and Mitigation Recreational Resource management & Tourism	% (percent)	17%	32%

Performance Indicators for the Commerce and Transportation Business View

Table 37 – Commerce and Transportation Performance Indicators

Indicator	Units of Measure	Baseline	Target
CTAWx - Number of Weather Related Mishaps / 100,000 Flight	Number	FY 2006 Actual	15% Reduction by 2010
CTAWx - Weather Related Air Traffic Delays	Percent	FY 2002 Actual	10% Reduction by FY 2010
CTER Loss of life	Lives lost	[TBD]	[TBD]
CTER Program Cost Index	Cost per constituent served	[TBD]	[TBD]
CTER Registration Cost Index	Cost per beacon registration	[TBD]	[TBD]
CTCL Percentage of letters sent to applicant prior to deadline informing them of the USG s inability to meet an intended deadline	Ratio of number of letters sent prior to regulatory deadline versus all such letters that were sent	40% (FY2000-FY2004 average)	90% (by FY 2006)
CTSW Grants	Absolute number	Program dependent	Program dependent
CTSW Reduce the number of fatalities during adverse weather	roadway fatalities per 100 million vehicle miles travelled	TBD	TBD
CTSW Reduce the number of fatalities in crashes involving large trucks during adverse weather	fatalities in crashes involving large trucks per million truck VMT	TBD	TBD
CTSW Time to transition research into operations	years	TBD	TBD
CTCL NOAA response time from final completeness determination to distribution to interagency partners for their recommendations	Number of calendar days (average)	4 (FY2000-2004 average)	3 (by FY 2006)
CTCL NOAA response time from license application receipt to distribution to agencies for completeness comment	Number of calendar days (average)	1 (FY2000-FY2004 average)	Sustain 1 (FY2004-2008)
CTCL NOAA response time from receipt of applicant answers to completeness questions to NOAA final determination of completeness of the application	Number of calendar days (average)	6 (FY2000-FY2004 average)	5 (by FY 2006)
CTCL NOAA response time from receipt of final agency concurrence to issuance of license to applicant	Number of calendar days (average)	21 (FY2000-FY2004 average)	18 (by FY 2008)
CTCL NOAA response time from receipt of last agency recommendation to distribution of draft license text to interagency partners for their concurrence	Number of calendar days (average)	11 (FY2000-FY2004 average)	10 (by FY 2006)
CTCL NOAA's total response time from license application receipt to license issuance on precedent-setting (PS) license applications	Number of calendar days (on average for the last 4 license applications received)	50 (on average for the last four PS license applications received from FY2001-FY2004)	40 (on average for the next four PS license applications received) (likely by FY 2007-dependent on application

Indicator	Units of Measure	Baseline	Target
			submittal rate by industry)
CTCL Response time from final agency comment on completeness to informing licensee of completeness status (including possible questions to answer).	Number of calendar days (average)	6 (FY2000-2004 average)	sustain average of 6 (FY2004-2008)

The following table specifies the performance indicators for the Satellite Sub-Goal

Table 38 – Satellites Performance Indicators

Indicator	Unit of Measure	Baseline	Target
OEGS GOES Quality Performance Measurement	Trending of total action items and incident reports	flat trend: for every item or report opened one is closed	Downward trend: for every item or report opened two are closed
OEGS GOES Timeliness Measurement	% of milestones met on schedule	70%	80%
OEPS NPP system readiness	date	Mar 2006 (2006)	Mar 2006
OEPS Meet 2009 launch date	date	2009	2009
OEPS Number of NPOESS products	percent	100 % plus/minus 5%	100 % plus/minus 5%
OEPS POES - On orbit performance	2 Operational Satellites	TBD	2011
OEPS POES N Launch	Feb 2005	2005	2005
OEPS Quality/Timeliness	date	Apr 2006 (2006)	Apr 2006
OEPS Quality/Timeliness	date	Apr 2005 (2006)	Apr 2005
OEPS cost performance	percentage	1.0 plus/minus 10%	1.0 plus/minus 10%
OEPS schedule performance	percent	1.0 plus/minus 10%	1.0 plus/minus 10%
OESS Efficiency	Number	2 per year (2004)	4 per year (2011)
OESS Quality/Customer Satisfaction	Number	0 (New Measure)	2 per product line (2011)

Indicator	Unit of Measure	Baseline	Target
OESS Timeliness	Percent	85% of data processed and distributed within 180 minutes from observation (2004)	88% of data processed and distributed within 180 minutes from observation (2011)
OESS Timeliness	Percent	96% of 275 GB received and processed within 120 minutes (2004)	98% of 380 GB received and processed within 120 minutes (2011)

The following table specifies the performance indicators for the Mission Support Sub-Goal

Table 39 – Mission Support Performance Indicators

Indicator	Unit of Measure	Baseline	Target
OEIT % hacker Intrusions	# of attempts/successful intrusions		
OEIT Certify and Accredit System	% Systems Accredited	100%	100%
OEIT Network and Application Services Availability	Percentage of time available per year	99.1	99.7
OELO gigabytes of data preserved/archived from wide variety of sources	gigabytes of data	new measure -	new measure -
OELO network and server uptime as a function of chronological time since activation	percentage (uptime divided by time since activation)	new measure - no baseline	95%(2011)

8.1.2. Bureau of Census Performance Metrics

Table 40 – Business/Function Performance Metric

Business/Function Performance Metric	Strategic Goal and Objective
Statistics on all economic indicators and on the full range of current statistics released on or ahead of schedule.	Census Strategic Goal 1 Objective 1.1
Quality standards such as standard errors met or exceeded for all data released.	Census Strategic Goal 1 Objective 1.1
Unit cost of surveys.	Census Strategic Goal 1 Objective 1.2
Implementation, on or ahead of schedule, of new collection methods to enhance respondent satisfaction.	Census Strategic Goal 1 Objective 1.3
New insights into how the economy and society function, as	Census Strategic Goal 1

Business/Function Performance Metric	Strategic Goal and Objective
revealed in papers generated through the Census Bureau's Center for Economic Studies and Research Data Centers.	Objective 1.4
All reimbursable projects completed on time, under or within budget, and according to customers' specifications.	Census Strategic Goal 1 Objective 1.5
Percent of businesses and governments reporting in the 2002 Economic Census and the Census of Government.	Census Strategic Goal 2 Objective 2.1
Percent of 2002 Economic Census and Census of Governments data disseminated to the public ahead of or on schedule.	Census Strategic Goal 2 Objective 2.1
Cost, across entire 2002 Economic Census and Census of Governments cycles, to profile each $100 billion in nominal 2002 Gross Domestic Product in comparison with the same statistic for 1997.	Census Strategic Goal 2 Objective 2.1
Estimates incorporating the newly developed methodology for estimating net migration by component (legal migration, temporary migration, and unauthorized migration) released on or ahead of schedule.	Census Strategic Goal 2 Objective 2.2
State and county age, sex, race, and Hispanic origin estimates that integrate school enrollment data, Medicare data, and other administrative data released on or ahead of schedule.	Census Strategic Goal 2 Objective 2.2
Population estimates and survey controls for all relevant subgroups and geographies produced on or ahead of schedule.	Census Strategic Goal 2 Objective 2.2
Number of demographic surveys that introduce new Census 2000-based samples on or ahead of schedule.	Census Strategic Goal 2 Objective 2.3
Statistical reliability levels for estimates of selected characteristics for various levels of geography.	Census Strategic Goal 3 Objective 3.1
Number of planned research questions that are answered in each test.	Census Strategic Goal 3 Objective 3.3
Completion of the baseline system architecture for 2010 on or ahead of schedule.	Census Strategic Goal 3 Objective 3.3
Milestones met or exceeded for the research and development of uses of administrative records to minimize respondent burden and cost.	Census Strategic Goal 4 Objective 4.1
Number of new and relevant data products developed without increased data collection costs.	Census Strategic Goal 4 Objective 4.1
Percent of the U.S. population with attitudes of trust toward the Census Bureau and who express a willingness to cooperate in data collection activities.	Census Strategic Goal 4 Objective 4.2
Percent of updated geographic products delivered on or ahead of schedule to meet the needs of the economic, demographic, and geographic programs.	Census Strategic Goal 4 Objective 4.3
Participation rate of local and tribal governments in the annual Boundary and Annexation Survey.	Census Strategic Goal 4 Objective 4.3
Percent of customer satisfaction with Census Bureau data products and services.	Census Strategic Goal 4 Objective 4.6
Percent of customer satisfaction with usability and accessibility of American FactFinder.	Census Strategic Goal 4 Objective 4.6
Number of employees recruited through partnerships with colleges and universities, including those with diverse student	Census Enabling Goal 5

Business/Function Performance Metric	Strategic Goal and Objective
populations.	Objective 5.1
Percent of employee satisfaction with communication as measured by the Organizational Assessment Survey.	Census Enabling Goal 5 Objective 5.2
Funds covered by clean audits.	Census Enabling Goal 5 Objective 5.3
Management reports produced on or ahead of schedule.	Census Enabling Goal 5 Objective 5.3
Criteria used for the Office of Management and Budget financial management scorecard.	Census Enabling Goal 5 Objective 5.3
Cost savings due to competitive sourcing.	Census Enabling Goal 5 Objective 5.3
Timely and effective handling of service calls about workplace conditions.	Census Enabling Goal 5 Objective 5.4
Number and percent of OSHA recordable workplace injuries.	Census Enabling Goal 5 Objective 5.4
Percent of employees who have successfully completed Census Bureau information technology security training.	Census Enabling Goal 5 Objective 5.4
Improve the efficiency of the field staff during the data gathering process, improve the accuracy of data gathered by the field staff, and reduce field staff costs in support of these activities.	Strategic IT Goal 1 Objective 1.1
Decrease the Census Bureau's survey turnaround time and costs and standardize the Economic Directorate's data analysis processing environment	Strategic IT Goal 1 Objective 1.2
Expand the scope of available Census Bureau data and data products, substantially increase the utility of core Census Bureau data dissemination capabilities, expand the list of data dissemination e-services, and expand the user base	Strategic IT Goal 1 Objective 1.3
Reduce operational risk, improve the accuracy of Census coverage, and contain cost	Strategic IT Goal 1 Objective 1.5
Decrease the costs associated with providing IT services	Strategic IT Goal 2 Objective 2.2
Achieve a Level 4 self-assessment in the IT Planning and Investment Review Maturity Model by September 30, 2006	Strategic IT Goal 3
Achieve a Level 4 self-assessment rating for the Census Bureau's IT Security Assessment Framework by July 31, 2005	Strategic IT Goal 4
Achieve a self-assessed Level 4.3 rating in the IT Architecture Maturity Model by September 30, 2005	Strategic IT Goal 5

Table 41 – Information/Data Performance Measure

Information/Data Performance Measure	Strategic Goal and Objective
Data collected from the planned number of households, governments, or businesses necessary to meet designed levels of reliability.	Census Strategic Goal 1 Objective 1.1
Overall weighted response rate, based on three modes of data collection – mail, telephone, and personal visit.	Census Strategic Goal 3 Objective 3.1
Cumulative number of total counties for which map feature	Census Strategic Goal 3

locations have been corrected in the MAF/ TIGER database.	Objective 3.2
Percent of employees who are trained and aware of privacy principles.	Census Strategic Goal 4 Objective 4.2
Percent of systems/projects having a completed Privacy Impact Assessment.	Census Strategic Goal 4 Objective 4.2
Percent of managers' satisfaction with timeliness and quality of financial and management information.	Census Enabling Goal 5 Objective 5.3
Improve the efficiency of the field staff during the data gathering process, improve the accuracy of data gathered by the field staff, and reduce field staff costs in support of these activities	Strategic IT Goal 1 Objective 1.1
Provide the ability to archive and retrieve microdata and associated metadata	Strategic IT Goal 1 Objective 1.4

Table 41 – Applications/Services Performance Metric

Applications/Services Performance Metric	Strategic Goal and Objective
Percent of recurring surveys collecting data electronically	Census Strategic Goal 1 Objective 1.2
Percent of businesses and governmental units responding electronically	Census Strategic Goal 1 Objective 1.3
Percent of households interviewed using electronic methods	Census Strategic Goal 1 Objective 1.3
Number of improvements to data coding, processing, and analysis as a result of findings from the Longitudinal Employer Household Dynamics Program	Census Strategic Goal 1 Objective 1.4
Change in percent of 2002 Economic Census and Census of Governments data collected electronically compared with 1997	Census Strategic Goal 2 Objective 2.1

Table 42 – Infrastructure Performance Metric

Infrastructure Performance Metric	Strategic Goal and Objective
Percent of customer satisfaction with the management and availability of information technology services and systems	Census Strategic Goal 4 Objective 4.4
Percent of milestone dates and planned deliverables met in the design and testing of technology and methodology solutions for collection and processing tools/application systems	Census Strategic Goal 4 Objective 4.5
Percent recovery of tested systems during testing of continuity of operations capabilities	Census Enabling Goal 5 Objective 5.4
Decrease the amount of time customers spend waiting for IT-related problems to be resolved	Strategic IT Goal 2 Objective 2.1
Enhance Internet connectivity capabilities, ensure continuity of operations after a disaster, and determine the possible benefits derived from implementing an eSAN	Strategic IT Goal 2 Objective 2.3

8.1.3. BEA Performance Metrics

Table 43 – Business/Function Performance Metric

Measure	FY 2001 Actual	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Target	FY 2006 Target
Reliability of Delivery of Economic Data (Number of scheduled releases issued on time)[25]	100%	50 of 50	48 of 48	54 of 54	54	TBD
Customer Satisfaction with Quality of Products and Services (Mean rating on a 5-point scale)	N/A (survey postponed)	4.3	4.4	4.3	Greater than 4.0	Greater than 4.0
Percent of GDP Estimates Correct	New	83%	85%	88%	Greater than 85%	Greater than 85%
Improving GDP and the Economic Accounts	New	Developed new measures to address gaps and updated BEA's accounts; designed prototype of new quarterly survey of international services; developed new pilot estimates that provide better integration with other accounts.	BEA completed all major Strategic Plan milestones related to improving the economic accounts (completed 164 milestones out of 171 overall).	Successful completion of related Strategic Plan milestones relating to improving the economic accounts.	Successful completion of related Strategic Plan milestones, including updates of national accounts.	Successful completion of related Strategic Plan milestones.
Accelerating Economic Estimates	New	New	BEA completed all major Strategic Plan milestones related to accelerating economic estimate	BEA completed all major Strategic Plan milestones related to accelerating economic estimates.	Successful completion of related Strategic Plan milestones to accelerate economic measures as funded	Successful completion of related Strategic Plan milestones.

[25] Prior to FY 2002, this measure reported the percent of releases delivered on time and on schedule.

Measure	FY 2001 Actual	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Target	FY 2006 Target
			s (completed 98 milestones out of 103 overall).		in FY 2003 and FY 2004.	
Meeting U.S. International Obligations	New	New	BEA completed all major Strategic Plan milestones related to meeting U.S. international obligations (completed 99 milestones out of 103 overall).	BEA completed all major Strategic Plan milestones related to meeting U.S. international obligations.	Successful completion of related Strategic Plan milestones related to meeting international commitments as funded in FY 2003 and FY 2004.	Successful completion of related Strategic Plan milestones.
Upgrading Information Technology Systems	New	Developed new systems, including implementation of prototype phase of new NIPA core processing system; developed improved interactive features on the BEA Web site; extended electronic reporting for international surveys.	BEA completed all major Strategic Plan milestones related to upgrading IT systems. (completed 76 out of 79 overall).	BEA completed all major Strategic Plan milestones related to upgrading IT systems.	Successful completion of related Strategic Plan milestones	Successful completion of related Strategic Plan milestones

8.1.4. BIS Performance Metrics

Table 44 – BIS Performance Metric

Performance Measure	Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be taken
[1] Measure 1a <*return*> **Median Processing Time for Referrals of Export Licenses to Other Agencies (Days)**	ECASS	Monthly	ECASS	BIS's OPEM will perform two types of checks to ensure data are entered where they should be (system integrity) and to ensure that the data are accurate and valid	None	None
[2] Measure 1b <*return*> **Median Processing Time for Export Licenses Not Referred to Other Agencies (Days)**	ECASS	Monthly	ECASS	BIS's OPEM will perform two types of checks to ensure data are entered where they should be (system integrity) and to ensure that the data are accurate and valid	None	None
[3] Measure 1c **Median Processing Time for Issuing Draft Regulations (Months**)	Paper records such as official publications and draft regulations	Semi-annual	Office Files	BIS's OPEM will validate the performance measure against supporting documentation	None	None

Performance Measure	Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be taken
[4] **Measure 1d** **Level of Exporter Understanding of BIS Export Control Requirements**	Value of Information (Average Score on a scale of 1-5) Export Seminar Surveys	Monthly	Survey Results Database	BIS's OPEM will validate the performance measure against supporting documentation	Data is dependent on the voluntary responses of seminar participants and in based on respondent opinion. Opinion may, or may not be a factual indicator of performance.	None
	Percent Knowledge Gained Index Export Seminar Surveys	Monthly	Survey Results Database	BIS's OPEM will validate the performance measure against supporting documentation	None	None
[5] Measure 1e **Percent of Industry Assessments Resulting in BIS Determination on Revising Export Controls**	Written Determination to Impose, Revise, or Continue Controls Based on the Results to the Assessment	Semi-annual	Office Files	BIS's OPEM will validate the performance measure against supporting documentation	None	None

Performance Measure	Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be taken
[6] Measure 2a **Number of Site Assistance Visits Conducted to Assist Companies Prepare for International Inspections**	Site Assistance and Inspection Reports	Semi-annual	Office Files	BIS's OPEM will validate the performance measure against supporting documentation	None	None
[7] Measure 3a <return> **Number of Investigative Actions that Result in the Prevention of a Violation and Cases Which Result in a Criminal and/or Administrative Prosecution**	Export Enforcement IMS	Monthly	Export Enforcement IMS	BIS's OPEM will perform two types of checks to ensure data are entered where they should be (system integrity) and to ensure that the data are accurate and valid	None	None
[8] Measure 3b <return> **Number of Post-Shipment Verifications Completed**	Export Enforcement IMS	Monthly	Export Enforcement IMS	BIS's OPEM will perform two types of checks to ensure data are entered where they should be (system integrity) and to ensure that the data are accurate and valid	None	None

Performance Measure	Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be taken
[9] Measure 4a **Number of Targeted Deficiencies Remedied in the Export Control Systems of Program Nations**	Paper Records	Semi-annual	Office Files	BIS's OPEM will validate the performance measure against supporting documentation	None	None

CWC Operationalized Performance Indicators

Table 45– CWC Operationalized Performance Metric

Fiscal Year	Measurement Area	Measurement Category	Measurement Indicator	Baseline	Planned IT Measures Improvement to the Baseline	Actual Results
2005	Technology >	Effectiveness	Provide timely and accurate declaration data information to the TCD staff in order to provide timely Site Assistance Visits.	Stand-alone system	Reduce errors caused by maintaining multiple databases.	Not applicable at this time.
2005	Processes and Activities >	Cycle Time and Resource Time	Decrease the time U.S. Industry and U.S. Government spends in preparation, processing and analysis of declarations for final U.S. data declaration submission to the Organization for the Prohibition on	Decrease processing time per declaration.	Improve processing time by 10 minutes per declaration	Not applicable at this time

			Chemical Weapons.			
2005	Customer Results	Customer Benefit	Number of declarations received from U.S. Industry using web application	30 declarations received with the first release of the web application.	100% increase over previous year declarations	Not applicable at this time
2005	Mission and Business Results	International Affairs and Commerce	Provide timely and accurate declaration data to the OPCW and ensure U.S. Industry complies with the CWC treaty.	2 companies	Reduce the number of U.S. companies referred to enforcement for non-compliance	Not applicable at this time

ECASS Operationalized Performance Measures

Table 46 – ECASS Operationalized Performance Measures

Fiscal Year	Measurement Area	Measurement Category	Measurement Indicator	Baseline	Planned Improvement to the Baseline	Actual Results
2006	Customer Results <*Return to LOS*>	Customer Benefit		Currently 60% of SNAP submissions are submitted electronically	Increase by 20% the number of work items submitted electronically	
2005	Mission and Business Results <*Return to LOS*>	Administrative Management		Improve timely processing needed to accomplish case management tasks.	10% decrease in the number of hours needed to accomplish case management tasks.	
2007	Customer Results <*Return to LOS*>	Customer Benefit		Current average Hold Without Action (HWA) time for commodity classifications is 11.5 days	Reduce by 10% the current HWA time for commodity classifications.	
2008	Customer Results <*Return to LOS*>	Customer Benefit		Total average processing time of export license applications referred is currently 44 days.	Decrease by 10% the processing time for export licenses referred to other agencies.	

2008	Customer Results <*Return to LOS*>	Customer Benefit		Current average Hold Without Action (HWA) processing time for export licenses is 14.3 days.	Decrease by 10% the current average Hold Without Action (HWA) processing time for export licenses.	

8.1.5. MBDA Performance Metrics

Table 47 – MBDA Performance Metrics

Performance Measures	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Target	FY 2006 Target	FY 2007 Target
Total # clients receiving services	5,600	7,647	29,475	30,000	30,050	30,050
# contract awards obtained	New	3,492	2,257	2,300	Retired*	Retired*
$ Value of Contract awards obtained	$1.3B	$.7B	$1.0B	$.8B	$.9B	$.9B
# financial awards obtained	1,512	539	678	650	Retired*	Retired*
$ Value of financial awards obtained	$.4B	$.4B	$.6B	$.45B	$.5B	$.5B
# Employee training hours	9,817	9,874	7,446	6,810	Retired*	Retired*
# National and Regional Strategic Partnerships	6	6	231	200	200	200
# New Job Opportunities Created				1,800	1,800	1,800
% Increase in Client Gross receipts				5%	5%	3%
% Increase in American Customer Satisfaction Index (ACSI)				5%	N/A (every 2 years)	3%

8.1.6. NIST Performance Metrics

Performance Goal: Accelerate Technological Innovation and Development of the New Technologies that will Underpin Future Economic Growth (NIST: Advanced Technology Program)

Performance Goal: Improve the Technological Capability, Productivity, and Competitiveness of Small Manufacturers (NIST: Manufacturing Extension Partnership)

Performance Goal: Assist U.S. Businesses and Other Organizations in Continuously Improving Their Productivity, Efficiency, and Customer Satisfaction by Adopting Quality and Performance Improvement Practices (NIST: Baldrige National Quality Program)

Performance Goal: Protect the National Information Infrastructure (NIST)

9. Department of Commerce IT Strategic Plan

This Office of the Secretary Strategic Information Technology Plan (SITP) documents the goals, strategies and actions required to implement new or update existing technology over the next five years to support program missions. This Plan provides achievements toward the Strategic Goals laid out in the FY 2004-2009 Strategic IT Plan and sets forth the framework for high level tracking and measuring of future progress and accomplishments. By applying the guiding principles inherent in this Plan, the Office of the Secretary can achieve its IT goals and strategies, comply with the spirit and intent of the Clinger-Cohen and Government Performance and Results Acts, the President's Management Agenda, as well as other legislation and guidance, and fulfill the priorities of the Department.

This Plan aligns with a comprehensive enterprise IT Architecture being developed for the Office of the Secretary that addresses its business processes, information flows and relationships, applications, data descriptions, and IT infrastructure. It also aligns with the Department's plan for implementing electronic government, and together these plans create the framework for development of the Operational IT Plan for the Office of the Secretary. These key planning documents will drive our IT capital planning evaluation criteria and decision making in the future.

In support of the Office of the Secretary's mission and functions, IT is used to improve staff productivity and efficiency and to facilitate information collection, processing, retrieval, maintenance, and dissemination. As such, this Office plans to expand the use of IT to realize high quality, cost-effective products and services throughout the Department. Information technology resources will support electronic government initiatives, perform process re-engineering efforts, empower customers Department-wide with better information and self-service capabilities, and maximize the effectiveness and efficiency of product and service delivery.

The complete document is provided in the reference material as are representative IT Strategic Plans from the operating units.

10. Department of Commerce Standards Profile

The Department of Commerce has identified eleven IT service categories. Each service category is further divided into service components that may support that category. The TRM defines not only technologies currently in use, but also those that could potentially be used in the future. The IT Services may be implemented on a single computer or on a collection of homogeneous or heterogeneous computing platforms. The TRM can be tailored to support a wide range of requirements, and an organization can add Service Categories or Components it deems necessary.

The associated Standards Profile provides a framework for specifying standards for these service components. A limited number of mandatory standards are identified, while other standards are recommended. Except for mandatory standards, an Operating Unit can use the Standards Profile to specify standards it needs for its specific business and technical needs. The complete TRM and Standards Profile framework are provided in the reference material.

11. Department of Commerce Performance Plan

The FY 2006 Annual Performance Plan provides the Department of Commerce's bureau-specific performance goals and measures that align with the Department's strategic goals and objectives. This plan sets the framework for the Department's annual performance.
Dept of Commerce addresses Performance Plans at the Operating Unit level. Therefore there is a separate Performance Plan for:

- Department Management
- Bureau of Economic Analysis
- Bureau of Industry and Security
- Bureau of Census
- Economic Development Administration
- International Trade Administration
- Minority Business Development Agency
- National Oceanic and Atmospheric Administration
- National Telecommunications and Information Administration
- Office of the Inspector General
- U.S. Patent and Trademark Office
- Technology Administration

12. Department of Commerce Governance Process

There is an established process for planning capital expenditures that requires documentation of a business case, the forecasted monetary requirements, feasibility studies, cost benefit analysis, etc. Recent directives from the Office of Management and Budget (OMB) have mandated that Enterprise Architecture and IT Security be included in this process.

The proper and best place to establish conformance to the DOC Enterprise Architecture is through the Commerce Information Technology Review Board (CITRB). The CITRB is chaired by the CIO and co-chaired by the Chief Financial Officer (CFO). Its members are the Director of the Office of Budget, the Director for Acquisition Management, the Director for Human Resources, the Deputy CIO, and CIOs from the National Oceanic and Atmospheric Administration, Census Bureau, National Institute of Standards and Technology, and International Trade Administration, and, on rotating basis, up to two other operating unit CIOs.

Recommendations of the CITRB are based on consensus evaluations on a green-yellow-red scale; using decision criteria to determine risk, return on investment, value of proposed IT projects, security compliance, and architectural compliance.

The CIO provides the operating units their ratings along with comments and suggestions for improvements, and an opportunity to improve their proposal justifications, where needed. CITRB members and Office of the CIO staff review the revised proposals and assign a final rating on a green-yellow-red scale, which the CIO provides to the Office of Budget.

Members of the Office of the CIO staff review smaller initiatives that do not meet the criteria for reviewed by the Board using the same process.
A pre-review process is now under way to examine initiatives prior to propose and ongoing systems by the CITRB. This process more fully examines compliance with the EITA, IT security requirements, privacy, and other areas as requested by the CIO. The review will be conducted by IT professionals skilled in these areas. The purpose of this review is to ensure that proposed and continuing investments meet all the requirements in these areas prior to being submitted to the CITRB. This will assist the CITRB and the submitting operating unit, verifying that all requirements are met prior to the formal CITRB presentation and review.

All initiatives must document deviations from the architecture. These deviations must be justified by legitimate business requirements and should be documented in the IT Investment Planning documentation, the project's Exhibit 300 Business Case, or other such documentation that is part of the investment planning process. It must also be supported by the operating unit's architecture, or sufficiently justified if it does not, and must be defended in the presentation to the CITRB.

<u>Department of Commerce Enterprise IT Architecture Advisory Group</u>

The Department of Commerce (DoC) Enterprise IT Architecture Advisory (EITA) Group is a resource to help address, research, refine, and promote the use of Enterprise IT Architecture as a strategic information management practice throughout DoC. All of DoC's Operating Units are members of the Advisory Group. The DoC EITA Advisory Group is subordinate to and reports directly to the DoC CIO. The Advisory Group is responsible for the following:

- Serves as technical counsel to the DoC Chief Information Officer (CIO) and the CIO Council on the subject of Enterprise IT Architecture.
- Makes recommendations and provides advice to the DoC CIO and the CIO Council with respect to policy, procedures, and standards related to the maintenance and update of the Enterprise IT Architecture.
- Reviews all operating Unit Enterprise IT architectures and provides recommendations through the CIO to the operating unit CIOs.
- Manages development and acquisition of Metis for DoC and promote its use throughout the DoC, as specified in the DoC Technical Reference Model (TRM).
- Coordinates the interface between the Department's EITA and OMB's Federal Enterprise Architecture and the related five Reference Models (Business, Service Component, Technical, Performance, and Data).

In addition the DoC Enterprise IT Architecture Advisory Group performs the following activities:

- Recommends IT technologies that may serve as "foundations" for Department-wide systems.
- Carries out tasks specifically assigned by the CIO or the CIO Council.
- Identifies improved IT architectural practices and promotes their adoption throughout the Department.
- Shares experiences, ideas, and promising practices among Advisory Group members and the CIO community at large.

The DoC EITA Advisory Group Charter is included as Appendix D.

13. Dept of Commerce Capital Planning and Investment Control Process

The DOC CPIC process considers compliance with the DOC EA as a critical part of its review of new IT investment proposals, as well as in control and evaluation reviews, all conducted under the leadership of the Department's Commerce IT Review Board. This review includes full consideration of how top level performance measures for programs and organizations are supported by the IT project being reviewed.

Each operating unit of the Department must implement a three-phased Information Technology (IT) Capital Planning and Investment Control process under the authority of its Chief Information Officer (CIO) addressing IT investment selection, control, and evaluation. This process recognizes that there are significant differences in mission and size among the operating units that make up the Department and anticipates that different implementation approaches for IT capital planning and investment analysis will be warranted across operating units. The larger operating units, including the National Oceanic and Atmospheric Administration, Census Bureau, National Institute of Standards and Technology, and International Trade Administration, should each establish a formal IT Investment Review Board to implement the process within their respective operating unit.

Each operating unit may define different levels of evaluation within their IT Capital Planning and Investment Control process based upon the relative importance, magnitude, and risk of the investments. In defining the different levels of evaluation, operating units should assume that the Commerce IT Review Board will have special interest in certain types of investments such as:

- Investments that merit special attention due to political sensitivity, mission criticality, risk potential
- Department-wide or inter-operating unit investments
- Those with life cycle cost greater that $25 million
- Investments that deviate from cost, schedule, or performance goals.
- Each phase of the process must include the following attributes to ensure successful results

PHASE I - IT Investment Selection for New Initiatives

The IT Investment Selection Phase should consider the investment portfolio (new, operational, and under development) and include processes to:

- Evaluate IT investment proposals, analyzing risks, benefits, and costs
- Prioritize new investments based on program priority, risk, and return
- Make investment decisions and establish the review cycle
- Forward the most promising proposed investments to the Commerce IT Review Board for consideration in the annual budget review

Critical success factors for the selection phase are:

- A team that includes executive program managers, the Chief Information Officer (CIO), Chief Financial Officer (CFO), the Chief Executive Officer (CEO), and/or Chief Operating Officer (COO), and makes investment decisions based on the value to the organization as determined by comparisons and tradeoffs among competing investment proposals
- Documented and quantifiable decision-making criteria that examine expected risk-adjusted return on investment, technical risks, improvements to program effectiveness, performance measures, and customer impact
- Assessment of the current and target architecture including development investments and the existing technology environment as they relate to proposed investments
- Pre-defined thresholds and authority levels for channeling investment evaluations and decisions to appropriate management levels to accommodate organization specific versus operating unit needs
- Availability of the correct management skills and project management discipline for successfully completing the investment, including a performance measurement system

PHASE II - IT Investment Control For Investments Under Development

The Control Phase should include processes to:

- Identify problems and monitor investments against benefits delivered, established costs, scheduled milestones, and performance measures
- Identify alternatives to correct deficiencies and take appropriate action
- Recommend investments for further review by the Commerce IT Review Board

Critical success factors for the control phase are:

- Regularly scheduled investment reviews that involve senior management and the CIO, CFO, CEO, and/or COO, and result in decisive action to solve problems and approval/disapproval decisions on investment continuance
- Solutions to problems that are considered the province of both program officials and the CIO and result in documented management decisions including information supporting required changes
- Explicit measures and data used to monitor expected versus actual investment outcomes on cost, schedule, and performance that are consistently maintained throughout the organization and readily accessible
- A positive environment for raising current or potential investment problems that warrant management attention and action
- An effective management methodology for investment development.

PHASE III - Evaluation of Operational Investments

The Evaluation Phase should include processes to:

- Conduct post-implementation review of all major investments that focus on identifying the cause of discrepancies between anticipated versus actual results in terms of cost, schedule, performance, and delivered benefits to mission improvement, and make recommendations to continue or consider alternatives to the operational investment

- Use lessons learned as a result of post-implementation reviews to improve the existing investment selection and control processes
- Recommend investments for further review and edification of the Commerce IT Review Board.

Critical success factors for the evaluation phase are:

- Actions taken on evaluation recommendations
- Documented lessons learned.

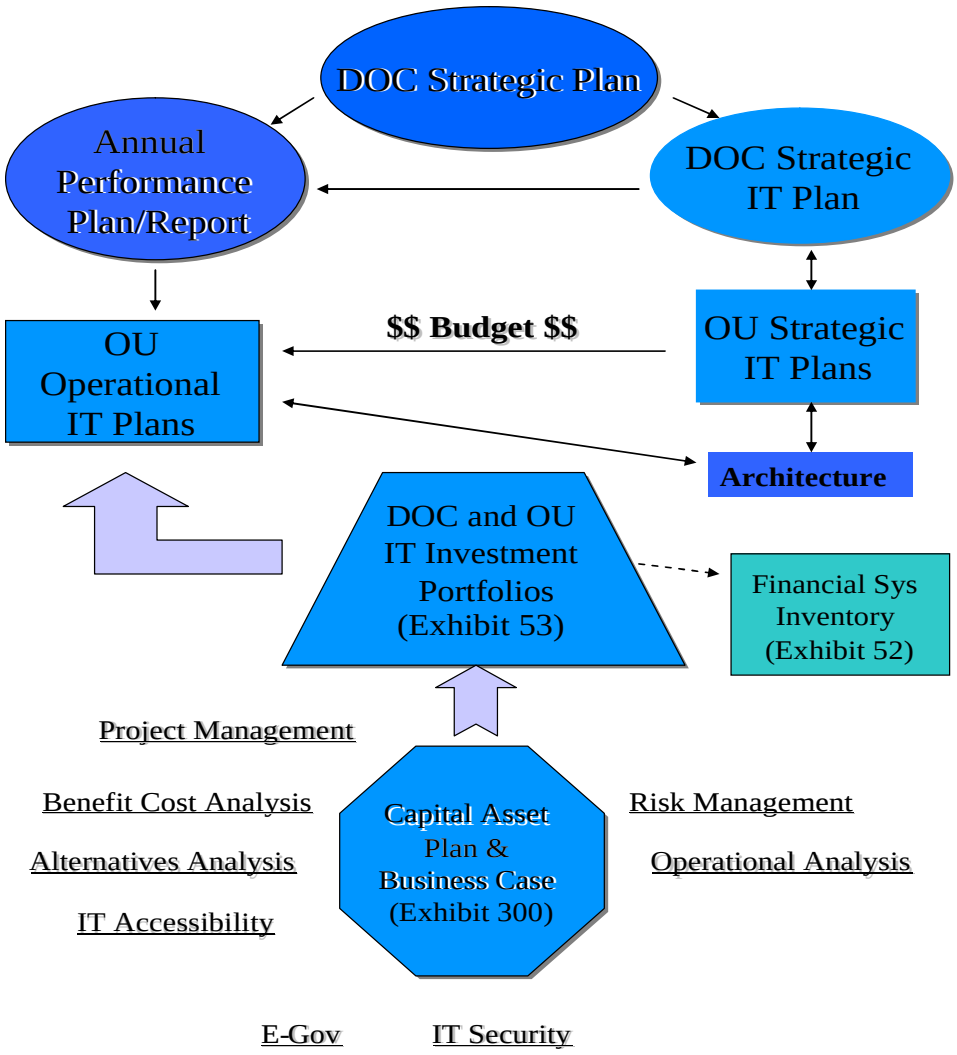


Figure 24 - Linkage of IT Planning Documents

Capital Planning is also addressed at the operating unit level as shown in the figure below from the Bureau of Census

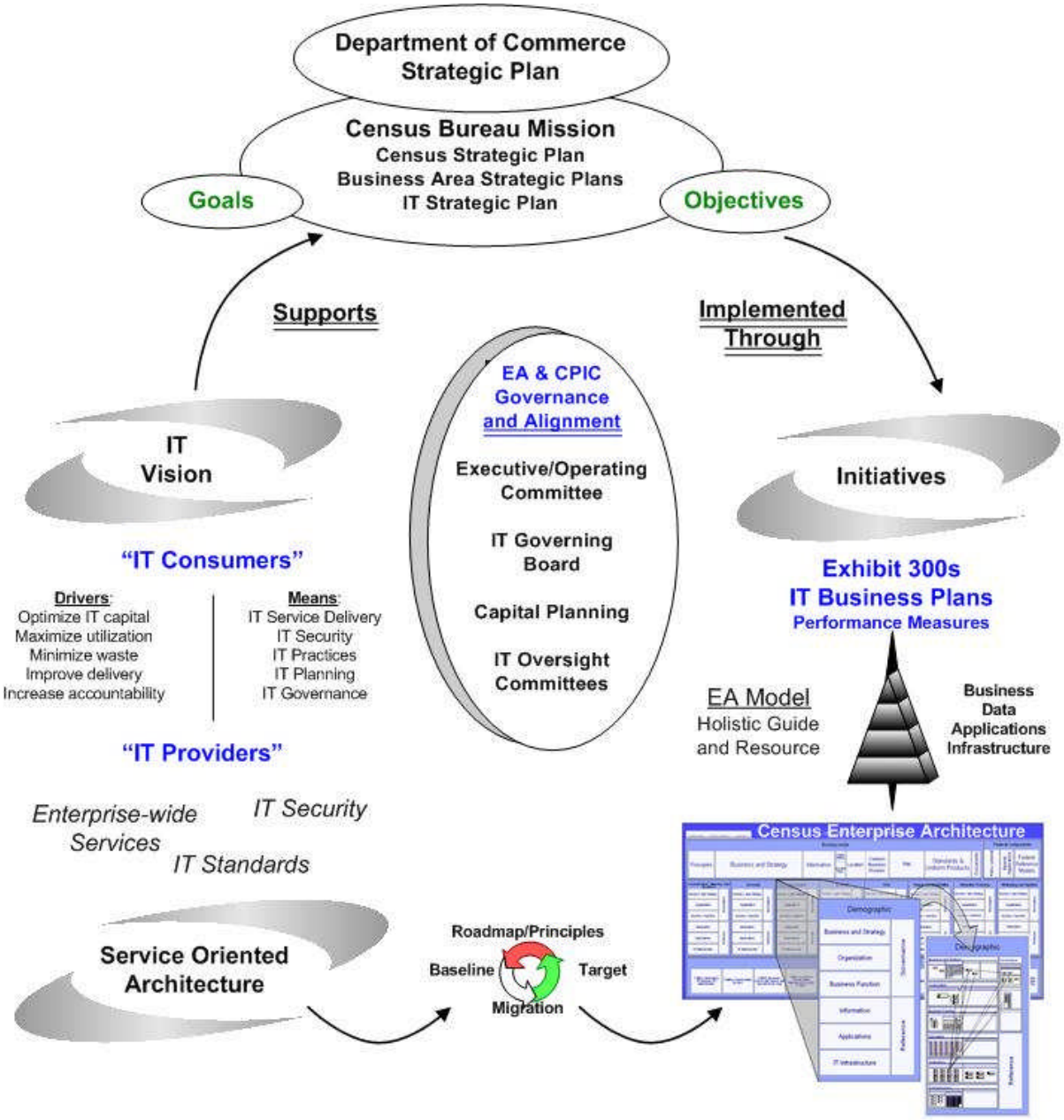


Figure 25 - Census Governance - Strategy, Vision, Architecture, Capital Planning

14. Department of Commerce Participation in E-Gov Initiatives

The following is a listing of the E-Gov initiatives within the Department of Commerce:

Table 48 – DOC E-Gov Initiatives

Initiative	Title	FEA LoB
USA Services	USPTO Information Dissemination Management System	Public Affairs
E-Rulemaking	NOAA/NMFS/Fisheries Information System	Natural Resources
Federal Asset Sales	OS OAS Small IT Systems	Administrative Management
International Trade Process Streamlining	ITA Trade Policy Information System (TIPS)	International Affairs and Commerce
	Census – Improve the Automated Export System	General Government
Geospatial One Stop	Census – Geographic Support Systems	General Government
	Census – MAF/TIGER Enhancements	General Government
	NOAA/NOS/Geodetic Support System	Natural Resources
Disaster Management	NOAA/NWS/NOAA Weather Radio (NWR) All Hazards Weather Network	Disaster Management
	NOAA/NWS Regions and Field	Environmental Management
Safecom	NTIA – Radio Spectrum Management	Information and Technology Management
Grants.gov	EDA Operations Planning and Control System (OPCS)	Economic Development
E-Clearance	OS OSY Systems	Administrative Management
Integrated Acquisition Environment	Commerce Business Environment	Supply Chain Management
	OS OAM Small IT Systems	Supply Chain Management
		Administrative Management
	USPTO Core Financial System	Financial Environment
E-Records Management	USPTO Enterprise Records Management and Data Quality Services	Information and Technology Management
Financial Management LoB	Commerce Business Systems (formerly CAMS)	Financial Management
	EDA CAMS Grant Accounting and Loan Billing and Management System	Financial Management
	Census – Other Financial Management	Financial Management
	ITA Financial Management System	Financial Management
	MBDA E-Z Financial System	Financial Management
	NOAA/NFA/Financial Management IT Operations	Financial Management
	NOAA/NFA/Financial Management IT Operations	Financial Management
	NOAA/NFA/NOAA Non-Core CAMS Financial Management System	Financial Management
	USPTO Core Financial System	Financial Management
	USPTO Enterprise Data Warehouse	Financial Management
	NTIS Financial Management	Financial Management

Initiative	Title	FEA LoB
Initiative	Title	**FEA LoB**
	NIST Other Financial Management	**Financial Management**
Human Resource Management LoB	OHRM Automated Hiring	**Human Resource Management**
	OS HR Web-base Time and Attendance System	**Human Resource Management**
	USPTO Human Resource Management Support System	**Human Resource Management**
Grants Management LoB	EDA Operations Planning and Control System	**Economic Development**
	NOAA/NFA/NOAA Grants Back-End System Development	**Natural Resources**
	NIST-wide Grant Management Information System	**General Science and Innovation**
ESRI SmartBUY	Census – Geographic Support Systems	**General Government**
	Census – MAF/TIGER Enhancements	**General Government**
	Commerce Business Systems	**Financial Management**
	Department of Commerce Enterprise IT Architecture	**Planning and Resource Allocation**
	Census – American Community Survey	**General Government**
	Census – Data Access and Dissemination System	**General Government**
	Census – Decennial 2010 Systems Design, Integration, and Decennial 2010 Testing and Evaluation	**General Government**
	Census – Economic Census and Surveys	**General Government**
	Census – The Longitudinal Employer-Household Dynamics Program	**General Government**
	BEA Estimation Information Technology System	**General Government**
	NOAA/NWS/Advanced Weather Interactive Processing System	**Environmental Management**
	NOAA/NWS/NCEP Weather and Climate Forecast System IT Support	**Environmental Management**
	NOAA/NWS/Office of Science and Technology, Other Systems	**Environmental Management**
	NOAA/NWS/NWS Office of Hydrologic Development	**Environmental Management**
	NOAA/NWS/NWS COOP Modernization	**Environmental Management**
	NOAA/OAR/FSL – High Performance Computing and Communications	**Environmental Management**
	NOAA/OAR/GFDL High Performance Computing System	**Environmental Management**
	USPTO Enterprise Data Warehouse	**Financial Management**
	NOAA/NOS/Geodetic Support System	**Natural Resources**
Manugistics SmartBUY	Commerce Business Environment	**Supply Chain Management**
	OS OAM Small IT Systems	**Supply Chain Management**
Novell SmartBUY	**Department of Commerce Consolidated IT Infrastructure**	**Information and Technology Management**

Appendix A: Traceability Matrix

Agency:	DoC
Agency EA Date:	
Evaluation Date:	5/31/2005

Change	**Description: Facilitating and managing change to any aspect of the enterprise.**							
	No evidence presented	**EA is initial, informal, and ad-hoc**	**Formal but basic, follows some best practices**	**EA is beginning to be operationalized across the enterprise (i.e. part of transition, CPIC, budget)**	**EA is operationalized and provides performance impact to business operations**	**IT planning is optimized through the EA**		
	Level 0	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Assessment Value**	**Rationale**
A. Architectural Approach	No evidence presented	EA identifies an architectural approach and framework (e.g. Zachman, DODAF, etc)	Key stakeholder business drivers are documented.	The transition strategy describes some portions of the changes needed to transition from current to target; and information value chain model (operational views).	Process for identifying, managing, and closing gaps between target and current state is well documented within the EA.	The EA demonstrates a relationship of the transition, target, and gap closure to investment planning and execution.	**3.00**	The Department of Commerce is using the FEA framework as their architectural approach. As a result of the fact that the Dept of Commerce is a very diverse organization, the key stakeholders and business drivers are captured at the enterprise and operating unite level. At both the enterprise and operating unit level transition plans for the migration from the current to target architectures are provided. Change is managed at both the enterprise and the operating unit levels. References include sections 2.1, 3.3, 4.0 and 5.0 of this document and in the documentation provided by the operating units in the reference material. The Commerce Information Technology Review Board (CITRB) is responsible for establishing and maintaining conformance with the DOC EA (see section 12) DOC has implemented a Capital Planning and Investment process at both the department and operating unit levels (see section 13 and operating units EA documentation in the reference materials
B. Strategic Direction	No evidence presented	EA demonstrates agency head and stakeholder buy-in is documented; EA demonstrates management structure and control is established.	The EA defines an architectural processes and presents a baseline architecture.	The EA defines a target architecture. The EA defines change and risk management strategy or approach.	The EA defines a transition strategy. The EA defines a communications strategy.	The EA demonstrates application of the EA for purposes of creating and maintaining investment programs. The EA demonstrates an implemented process for managing changes and updates to the EA.	**3.00**	The Commerce Information Technology Review Board (CITRB) is chaired by the CIO and CFO jointly. It members include several of the operating units CIO's. The baseline and target architecture for the enterprise and representative operating units are provided in this report and the reference material. The CITRB manages change and risk for the enterprise. References include Sections 4.0, 5.0, 12.0 of this document and in the documentation provided by the operating units in the reference material. A synopsis of the gap analysis and migration identifying the line of business subfunction, target state, current state and actions is provided (sequencing plan) (see section 6). The Communications Strategy is in progress (see section 7)
						Section Value	**3.00**	

+

Integration	Description: Realizing the business rules are consistent across the organization, the data and its use are certain, interfaces and information flow are standardized, and the connectivity and interoperability are managed across the enterprise.							
	No evidence presented	**EA is initial, informal, and ad-hoc**	**Formal but basic, follows some best practices**	**EA is beginning to be operationalized across the enterprise (i.e. part of transition, CPIC, budget)**	**EA is operationalized and provides performance impact to business operations**	**IT planning is optimized through the EA**		
	Level 0	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Assessment Value**	**Rationale**
A. Interoperability	No evidence presented	Interoperability standards are defined at a conceptual basis (list of non-proprietary standards, i.e. patterns, web services, etc).	Interoperability standards are defined at the business function level, and are aligned to the TRM and SRM.	Interoperability standards are defined through patterns and are related to business functions. Business functions are aligned to components and services at the enterprise level.	Interoperability and sharing of information are two of the backbones of the target architecture.	Using common interoperability standards, the EA demonstrates the ability to link and integrate common technologies and business processes.	**3.00**	Interoperability standards are aligned to the TRM. The Standards Profile provides a framework for specifying standards for the service components A mapping of the TRM to services is included for commerce and transportation and for weather and water (see section 10 and the NOAA reference material). As shown with BEA there is a mapping to the BRM, SRM and their own TRM that also shows standards profiles. The process for synchronizing all of this is detailed in BEA's Strategic Planning Process as well as the Dept level CPIC process. References include sections 2.1, 12.0 and the BEA EITA2005 that is included in the documentation provided by the operating units in the reference material.
B. Data	No evidence presented	Data architecture is broadly defined and not linked to other portions of the architecture.	Data relationships, interdependencies, and definitions are defined at a conceptual level.	Common and defined approach to integrating data with business processes and mission priorities is defined and used throughout the EA.	The target architecture reflects a transition strategy and judgment on the data required for the future state.	EA demonstrates its ability to increase integration and promote the re-use of data within the enterprise and across other agencies (linkage of data to common components, business functions	**2.00**	The data architecture for the current and target architecture is captured in this report and in the reference material for the operating units. The NOAA CLASS system will provide a common approach to storing new and legacy data for ease of reatrieval and is one of the critical modernization activities within the Dept of Commerce. References include sections 4.2. 5.2, 6.0 and in the documentation provided by the operating units in the reference material.
C. Business Logic	No evidence presented	Standard business processes and rules are broadly defined and conceptual in nature.	Business processes and rules are integrated and described for portions of the architecture.	Business processes and rules are integrated and described throughout all portions of the architecture.	The transition strategy describes the changes required to business processes and rules.	The EA demonstrates the results of viewing common business processes and rules across the enterprise and across other agencies (integrated with	**2.00**	The DOC uses the FEA BRM to capture their business processes (see section 2.1). Legislative, policy and technology drivers are included (see section 5) and provide the information to derive the business rules. The DOC has mapped their operating units to the BRM (see section 4.1) The current and target business architecture layers address the business processes at the department level (sections 4.1 and
D. Interface	No evidence presented	Interface components and requirements are broadly (conceptually) defined.	Detailed external interface descriptions are contained within the EA.	Some form of a "node" diagram depicts inter-relationships between interfaces and business functions.	Interface descriptions and "node" diagrams are integrated with performance measures. Interfaces are represented at the enterprise and function	The EA demonstrates the establishment of common components integrated through well defined interface requirements.	**3.00**	The infrastructure architectures address interfaces at the department level (see sections 4.4 and 5.4). Each of the operating units also address interfaces and business processes. For example NOAA has provided node diagrams for their CLASS initiative and in section 5.2.1 of their EA documentation
						Section Value	**2.50**	

Convergence	Description: Striving toward a standard IT product portfolio as contained in the Technical Reference Model (TRM).							
	No evidence presented	**EA is initial, informal, and ad-hoc**	**Formal but basic, follows some best practices**	**EA is beginning to be operationalized across the enterprise (i.e. part of transition, CPIC, budget)**	**EA is operationalized and provides performance impact to business operations**	**IT planning is optimized through the EA**		
	Level 0	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Assessment Value**	**Rationale**
A. Components	No evidence presented	The EA defines components at a high level of definition.	The EA defines components and shared services throughout the enterprise.	The EA uses services, components, and interoperability relationships to describe portions of the architecture.	The EA is described using services, components, and interoperability relationships through all artifacts and is described across all relationships.	The EA uses services, components, and interoperability relationships to describe transition and investment decision processes and to present a service/component enabled target architecture.	**2.00**	Components are defined at a high level (see sections 4.1, 4.3, 5.1, 5.3 and the documentation provided by the operating units in the reference material). The current and target EA descriptions describe the components and shared services throughout the enterprise using the FEA SRM. Some of the services are at the department level and others cross operating unit boundaries. (see sections 4.1, 4.3, 5.1, 5.3 and in the documentation provided by the operating units in the reference material)
B. Technical Platform	No evidence presented	EA contains TRM definitions only.	EA defines a high-level linkage to services and technology.	EA defines and integrates TRM with a view of services, allowing patterns to develop.	EA provides an inventory of TRM and services, with a view towards identifying redundant TRM and service components (inter-relationships are described).	EA links all artifacts to TRM and services, and provides the ability to view redundancy across all EA products based on any TRM or service component.	**2.00**	The TRM and the standards profile framework follow the FEA TRM terminology (see section 10 and the complete document is provided the reference material). Discussion about the integration of technology and services is included in this report (see sections 5.0, 6.0 and in the documentation provided by the operating units in the reference material). A mapping of the TRM to services is included for commerce and transportation and for weather and water (see section 10 and the NOAA reference material)
C. Performance	No evidence presented	EA conceptually defines performance measures.	EA links performance measures to some portions of the architecture segments.	EA defines detailed performance measures and links them to service and technical portions of the architecture.	EA defines detailed performance measures and links them to all technical and service layers of the architecture (clear relationship between performance measures and technical and service layers).	EA defines detailed performance measures, links them to all technical and service layers, and integrates performance measures with transition and investment planning	**2.00**	The performance measures are linked to the strategic goals and objectives of the Dept of Commerce then are assigned to the appropriate operating unit for stewardship with business related outcomes (see section 8 and the documentation provided by the operating units in the reference material)
D. Security	No evidence presented	Security standards are conceptually defined within the EA.	EA aligns security standards to the TRM.	Security standards are integrated within portions of the components, applications, and	Security standards are tightly defined within all levels of components, applications, and technologies.	Security standards are tightly defined and are presented as part of the transition planning and investment analysis	**3.00**	Security standards are defined in this report in the baseline and target architectures and within the TRM and Standards Profile document (see sections 4.5, 5.5 and the TRM and Standards document provided in the reference material)
						Section Value	**2.25**	

Business Alignment	Description: Ensuring the practices of the enterprise are aligned with strategic management intent.							
	No evidence presented	EA is initial, informal, and ad-hoc	Formal but basic, follows some best practices	EA is beginning to be operationalized across the enterprise (i.e. part of transition, CPIC, budget)	EA is operationalized and provides performance impact to business operations	IT planning is optimized through the EA	Assessment Value	Rationale
	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5		
A. Strategic Goals	No evidence presented	EA contains high-level strategic goals for the agency.	EA captures and depicts facts about functions, processes, and linkages/relationships or interdependencies.	Describes and depicts the linkage between internal business components and the achievement of business and customer-centric	Establishes manageable and measurable performance objectives and demonstrate improved resource allocation decisions.	Business-IT value chain analysis has been performed (i.e., redundant investments and common business services identified).	3.00	DOC has high level strategic goals (see section 3.3). DOC assigns goal stewardship to the operating units which have been mapped to the BRM (see sections 3.3 and 4.1). DOC has tied their strategic goals, objectives, outcomes and performance measure to the operating unit level (see section 8).
B. Business Target	No evidence presented	The EA defines conceptual target business functions (BRM).	Establishes a common vocabulary for describing the business context of the enterprise.	Describes a business vision linking the business vision to technology and target architecture.	The EA describes comparative determinations of the relative efficiency and effectiveness of investments/programs/ organizations through an alignment analysis.	The EA demonstrates the results or changes to business operations through alignment of investments and programs (i.e. successful implementation of portions of the target architecture).	3.00	The DOC BRM is included in this report (see section 2.1 and operating units documentation in the reference material). FEA BRM is the common vocabulary used by the DOC (see section 2.1 and operating units documentation in the reference material). The gap analysis and migration plan is linked to the BRM with references to the technology required (see section 6)
						Section Value	3.00	

Total Assessment Value:	2.69

Appendix B References

Dept of Commerce level documentation
BRM Mapping
Commerce IT Review Board Evaluation Criteria
Department of Commerce Information Technology Capital Planning and Investment Control Process: Operating Unit Responsibilities (dated January 12, 2004)
DoC Alignment Report
Department of Commerce Technical Reference Model and Standards Profile Framework
DOC EA Completion and Use Plan
Draft Enterprise Information Technology Architecture of the Department of Commerce
DOC Enterprise Architecture Principles
Linkage of IT Planning Documentation diagram
Mapping of Operating Units to Goals
Strategic Goals
Strategic IT Plan Version 3 Final (dated May 14, 2005)

Bureau of Census documentation
Census Enterprise Architecture Governance, Target, CPIC Alignment Info Briefing (dated January 2005)
Census Bureau Enterprise Architecture Profile (dated March 31, 2005)
Census 2005 Strategic IT Plan
2010 Census Architecture Version 1.0 (dated August 27, 2004)

Bureau of Economic Analysis documentation
Enterprise IT Architecture for the Bureau of Economic Analysis (dated March 31, 2005)
BEA Strategic IT Plan

Bureau of Industry and Security
BIS Life Cycle Management Technical Standards and Guidelines Version 1.0 (dated May 15, 2005)
BIS Baseline Business and Performance Architecture Version 1.1 (dated May 15, 2005)
BIS Information and Technology Standards and Guidelines Program Configuration Management Version 1.0 (dated May 2005)
BIS Data Architecture Version 1.0 (dated May 2005)
BIS Cross Reference Guide BIS EA to Department of Commerce EA Requirements (dated May 15, 2005)
BIS Application and Service Component Architecture Version 1.0 (dated May 15, 2005)
BIS Enterprise Architecture Document ECASS High-Level Architecture Version 1.0 (dated May 16, 2005)
BIS Strategic IT Plan

Economic Development Administration
EDA Enterprise Architecture Draft Version 2.8

Economics and Statistics Administration
Information Technology Architecture Plan
ESA 2005-2010 Strategic IT Plan

International Trade Administration
International Trade Administration Enterprise Architecture Update Version 4.0 (dated March 31, 2005)
Enterprise IT Investments at ITA: An Approach to Decision-Making presentation (dated April 13, 2005)

Minority Business Development Agency
MBDA Enterprise IT Architecture
MBDA IT Strategic Plan FY05

National Institute of Standards and Technology
Draft Revised NIST Enterprise Architecture Narrative (dated March 31, 2005)
NIST Strategic IT Plan

National Oceanic and Atmospheric Administration
NOAA Enterprise Architecture Version 1.4 (dated May 27, 2005)

U.S. Patent and Trademark Office
USPTO Enterprise Architecture Version 0.3 (dated May 17, 2005)
PTO Strategic IT Plan FY05

Office of the Secretary
OD Strategic IT Plan FY 2005-2010

Appendix C Operating Units Reference Material Traceability Matrix

Operating Unit	Current Architecture	Target Architecture	Gap Analysis	Migration Plan	Performance Metrics	FEA Reference Models
NOAA	Sections 4.1.1, 4.2.1, 4.3.1.1, 4.3.2.1, 4.3.3.1, 4.3.4.1, 4.4.1, 5.1.1, 5.2.1, 5.3.1, 5.4.1, 6.1.1, 6.2.1, 6.3.1, 6.4.1, 7.1.1, 7.2.1, 7.3.1, 7.4.1, 8.1.1, 8.2.1, 8.3.1, 8.4.1, 9.1.1, 9.2.1, 9.3.1, 9.4.1,	Sections 4.1.2, 4.2.2, 4.3.1.2, 4.3.2.2, 4.3.3.2, 4.3.4.2, 4.4.2, 5.1.2, 5.2.2, 5.3.2, 5.4.2, 6.1.2, 6.2.2, 6.3.2, 6.4.2, 7.1.2, 7.2.2, 7.3.2, 7.4.2, 8.1.2, 8.2.2, 8.3.2, 8.4.2, 9.1.2, 9.2.2, 9.3.2, 9.4.2,	Sections 4.5, 5.5, 6.5, 8.5, 9.5	Sections 4.6, 5.6, 6.6, 8.6, 9.6	Sections 4.7, 5.7, 6.7, 7.5, 8.7, 9.7	BRM Section 1.2, SRM Section 1.3, TRM Section 1.4
Bureau of Census	Sections 7.2, 7.3, 7.4,	Sections 8.1, 8.2, 8.3, 8.4 and 2010 Census Architecture document	Section 9	Section 9.1	Section 7.1.6, 7.2.9, 8.1.6, 8.4.5,	PRM Section 4.1, BRM Section 4.2 and Census Architecture document (Section 4) SRM Sections 4.3, 7.3.3, TRM Sections 4.4, 7.4.2, 8.3.3, 8.4.2 DRM Section 4.5,
BEA	Sections 3.4.1, 3.5.1, 3.6.1, 3.7.1,	Sections 3.4.2, 3.5.2, 3.6.2, 3.7.2,	Sections 3.4.3, 3.5.3, 3.6.3, 3.7.3,	Sections 3.4.4, 3.5.4, 3.6.4, 3.7.4,	Section Appendix B	PRM Section 2.8, BRM Section 2.9, SRM Section 5.1, TRM Section 4.1,
BIS	BIS Data Architecture Document BIS Application and Service Component Architecture document ECASS High-Level Architecture	BIS Data Architecture Document BIS Application and Service Component Architecture document ECASS High-Level Architecture			Programmatic Performance Measures are in the BIS Baseline and Performance Architecture document (Appendix G, H and I)	BRM is in the BIS Baseline and Performance Architecture document (p 38) PRM is in the BIS Baseline and Performance Architecture document (p. 43) SRM is in the BIS Application and Service Component Architecture document (Section 5)

Operating Unit	Current Architecture	Target Architecture	Gap Analysis	Migration Plan	Performance Metrics	FEA Reference Models
EDA	EDA EA (p. 38)					BRM (p. 17) SRM (p. 29) TRM (p. 34) Strategic to business alignment (p. 38) Business to Component alignment (p. 40) Business to data alignment (p. 43) Component to Technology alignment (p. 44)
ESA	Section 5	Section 7	Section 8	Section 9		TRM and standards profile (Section 10)
ITA	ITA 2005 EA Section 4.4, 6.4.3,	ITA 2005 EA Section 4.5, 5.5, 6.3, 6.4.4,	ITA 2005 EA Section 7.0	ITA 2005 EA Section 8.0		BRM is in the ITA 2005 EA (Section 3.2) PRM is in the ITA 2005 EA (Section 3.5) DRM is in the ITA 2005 EA (Section 4.1) SRM is in the ITA 2005 EA (Section 5.0) TRM is in the ITA 2005 EA (Section 6.0)
MBDA	Section 3.0	Section 4.0		Section 5.0	Section 8.0	SRM (section 7.0) TRM (section 6.0)
NIST	Draft NIST Revised 2005 EA narrative (p.9 and Attachment A)	Draft NIST Revised 2005 EA narrative (p. 11 and Appendix B)	Draft NIST Revised 2005 EA narrative (p.12)		Draft NIST Revised 2005 EA Narrative (pp. 23-26)	BRM is in the Draft NIST Revised 2005 EA narrative (Appendix C)
USPTO	Sections 2.1, 3.1, 5.1	Sections 2.2, 3.2, 5.3				BRM (section 2.2.1) PRM (section 2.4.1) DRM (section 3.1.1) TRM (section 5.2)

Appendix D: Enterprise Information Technology Architecture Advisory Group Charter

Department of Commerce
Enterprise IT Architecture Advisory Group Charter

This charter establishes the Department of Commerce (DoC) Enterprise Information Technology (IT) Architecture Advisory Group.

Purpose

The DoC Enterprise IT Architecture Advisory Group is a resource to help address, research, refine, and promote the use of Enterprise IT Architecture as a strategic information management practice throughout the Department of Commerce

What is an Enterprise IT Architecture?

An Enterprise IT Architecture (EITA) is a blueprint that explains how the results of Strategic Planning, Performance Planning, Budgeting, Capital Planning and Investment Control, Security and Privacy, Acquisition, and other related IT and general management processes work together to meet the enterprise's mission and objectives. It is a process and an integrated framework. The EITA defines the future state of the Department's information technology based on business and technology drivers as well as the transition plan for moving from the current (as-is) state to the future (to-be) state. The EITA is based on principles and standards. An EITA modeling toolset helps enable the EITA to be developed and implemented.

The DoC Enterprise IT Architecture Advisory Group will:

- Serve as the technical counsel to the DoC Chief Information Officer (CIO) and the CIO Council on the subject of Enterprise IT Architecture.
- Make recommendations and provide advice to the DoC CIO and the CIO Council with respect to policy, procedures, and standards related to the maintenance and update of the Enterprise IT Architecture.
- Review all operating unit IT architectures and provide recommendations through the CIO to the operating unit CIOs.
- Manage development and acquisition of a unified EITA management system tool for DoC and promote its use throughout the DoC, as specified in the DoC Technical Reference Model (TRM).
- Coordinate the interface between the Department's EITA management system tool and the OMBs Federal Enterprise IT Architecture and the related five Reference Models (Business, Service Component, Technical, Performance, and Data).
- Recommend IT technologies that may serve as [A]foundations[@] for Department-wide systems.
- Carry out tasks specifically assigned by the CIO or the CIO Council.
- Identify improved IT architectural practices and promote their adoption throughout the Department.
- Share experiences, ideas, and promising practices among Advisory Group members and the CIO community at large.

Authority

The DoC EITA Advisory Group will be subordinate to and will report to the DoC CIO.

Membership

- Membership will consist of representative(s) designated by the DoC CIO and the operating unit CIOs.
- The Chairperson will be selected by the DoC CIO.
- At the option of the Advisory Group, representatives of other organizations may periodically be invited to attend, observe, or contribute to meetings and activities.
- At the option of the Advisory Group, operating unit EITA support contractors may attend the meetings to attend, observe, or contribute to meetings and activities.
- A Secretariat will be established and filled by one of the Advisory Group members, or filled in an appropriate manner agreed upon by the Advisory Group members.

Procedures

- The DoC EITA Advisory Group will meet every two weeks, or as needed and agreed to by the Group.
- Decisions will be based on a consensus. A consensus is a decision that every Group member can accept and support.
- The Advisory Group will report its recommendations to the DoC CIO.
- Final approval for decisions and recommendations shall reside with the DoC CIO.

Responsibilities

- The Chair will develop the meeting agenda with assistance from members. A preliminary agenda will be sent out at least two days in advance of meetings.
  - The principal responsibilities of the Chair include arranging meetings and organizing materials to facilitate decision-making by the Advisory Group
  - The Secretariat will record and publish meeting minutes, decisions, and action items. Meeting minutes will be distributed to all Group members within one week of the meeting
  - An Advisory Group member will assume the responsibilities of the Chair when the Chair is not available

Meeting Ground Rules and Agreements

- Meetings will start at stated time and will end no later than adjournment time.
- Meeting can be extended by consensus.
- There will be clear goals and objectives for meetings and discussions, with an understanding and agreement on an issue, problem, or challenge.
- Advisory Group members' discussions are expected to be open, honest, and direct.
- All Advisory Group members are encouraged to participate in all discussions.
- Advisory Group members will respect each other and work to resolve differences, focusing on common goals and objectives.
- All ideas will be permitted.
- One person at a time will speak.